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[OFFICIAL NOTICE.]

Respecting the Official Work of the American Gas Light Association.

AMERICAN GAS LIGHT ASSOCIATION,
SECRETARY'S OFFICE,
530 Broadway, N. Y., Dec. 13, 1904.

To the Members American Gas Light Association: As there seems to be some misunderstanding respecting the standing of the official management of the Association, members will please note that the undersigned is the Secretary of the Association, and that Mr. A. E. Forstall is carrying forward the work of the Practical Class. All correspondence in connection with the Practical Class should therefore be addressed to Mr. A. E. Forstall, 58 William street, and all other matter pertaining to the Association to MR. GEORGE G. RAMSDELL, Secretary, at the above address.

BRIEFLY TOLD.

A NOTEWORTHY FEATURE OF THE WESTERN ASSOCIATION'S MEETING.—"W. A. B.," writing to the JOURNAL under date of the 22d inst., says: "The recent meeting of the Western Gas Association proved very attractive in more ways than one. The Association was honored by the presence of two well-known and progressive engineers and educators. Professor Frederick E. Turneaure, Dean of the College of Engineering and Mechanics, of the University of Wisconsin, and Professor Charles F. Burgess, of the College of Engineering and Mechanics, of the same Institution, respectively. The University of Wisconsin has been recognized as one of the most progressive and up-to-date educational institutions of the United States; and especially is this true of its engineering departments. The gas industry is to be honored by the recognition from this great educational factor of our country that our business is one demanding the best fundamental tuition of its officials that can be obtained. Professors Turneaure and Burgess, after being duly elected active members of the Western Gas Association, upon recommendation from the Board of Directors, announced that the University of Wisconsin was about to give due recognition to the gas industry by offering special facilities for students who desired to prepare themselves for their life's work in the gas industry. This announcement is sure to meet with warm approval, as it will materially assist in raising the high standard of our technical men. Professors Turneaure and Burgess are to be highly commended for their foresight in this matter, and the University of Wisconsin is to be congratulated upon having two such able and progressive gentlemen on the roster of its Faculty. The gas fraternity will heartily welcome this step and extends its best wishes for the success of this venture to the Wisconsin University."

THE GAS MEN OF IOWA TO ORGANIZE.—Another outcome of the Western meeting was that which resulted from the close coming together of many representative gas men from the State of Iowa. The result of their communings was the determination to form a State organization, and that the thing is to be a go will be readily admitted when it is known that the gas interests of the following Iowa business centers were in the conference: Burlington, Boone, Cedar Rapids, Davenport, Des Moines, Dubuque, Iowa City, Muscatine, Sioux City and Waterloo. The following temporary officers were elected:

MAY 29 1905
SMITHSONIAN DEPOSIT

President.—L. L. Kellogg, Sioux City.
Vice-President.—George McLean, Dubuque.
Secretary and Treasurer.—F. W. Kelly, Davenport.
Executive Committee.—Jansen Haines (Chairman) Des Moines; George S. Carson, Iowa City, and A. T. Averell, Cedar Rapids.

A committee on organization was appointed, and the first meeting of the Association will probably be held in Des Moines, some time during the holding of the State Fair next September. The Association does not propose to represent other gas interests than those concerned in and with same.

DEATH OF MR. JOHN T. HERRON.—Just as we go to press news comes to us of the death of Mr. John T. Herron, for 25 years or more connected with the Buffalo Gas Company, Buffalo, N. Y., and for several years its Superintendent. Mr. Herron, who was in his 43d year, died at his home in Buffalo the evening of the 18th inst.

ANNUAL MEETING OF THE SOUTHWESTERN GAS AND ELECTRICAL ASSOCIATION.—We are indebted to a correspondent in Dallas, Tex., for the following copy of the programme of the convention of the Southwestern Gas and Electrical Association, which was held in Denison, Tex., May 18, 19 and 20:

Thursday, May 18, morning session. Meeting was called to order at 10 A.M Address of welcome; response, J. F. Strickland, President of the Association; reading of the minutes of previous meeting; annual address by the President; report of committees.

Afternoon session: Meeting was called to order at 2 P.M. Reading of paper, "What are Some of the Ways which an Electric Railway Can Kindle and Foster a More Friendly Feeling Toward It on the Part of the Public?" by H. S. Cooper, General Manager Galveston City Railway, Galveston, Tex.; discussion. Reading of paper, "Suggested Preventives for the Damage Suit Industry," H. F. McGregor, Vice-President Houston Electric Company, Houston, Tex.; discussion. Reading of paper, "Ratio of Value of Coal and Oil as Fuel," Geo. H. Cushman, Superintendent of San Antonio Gas and Electric Company, San Antonio, Tex.

Friday, May 19, morning session: Meeting was called to order at 10 A.M. Reading of paper, "Relation of Gas to the Servant Girl Question," W. S. Rathel, Superintendent Waco Gas Company, Waco, Tex.; discussion. Reading of paper, "Relation of Gas to the Gas Man and to the Gas Consumer," W. J. MacCorkindale, Manager Sherman Gas Light and Fuel Company, Sherman, Tex.; discussion. Reading of paper, "The Necessity for Public Utility Companies," Judge E. B. Perkins, Dallas, Tex.; discussion.

Afternoon session—Meeting was called to order at 2 P.M. Reading paper, "What the Telephone has Done for Texas," J. E. Farnsworth, Vice-President and General Manager, Southwestern Telegraph and Telephone Company, Dallas; discussion. Reading of paper, "The Relation of the Manager and Employee to the Customer," E. W. Dunaway, Manager, Citizens' Telephone Company, Paris, Tex.; discussion. Reading of paper, "Diplomacy in Dealing with Patrons," Hon. T. B. Williams, Waxahachie, Tex. Adjournment. At the end of each session the Secretary remained at his desk for a few minutes to receive applications for membership and payment of dues.

Saturday, May 20.—Morning session.—Meeting was called to order at 10 A.M. Reading of paper, "The National Electrical Code and the Electrical Hazard from the Underwriters' Viewpoint," C. B. Roulet, Electrical Inspector, Electrical and Fire Prevention Association, Dallas; discussion. Reading of paper, "Equitable System of Arriving at Motor Rates," E. D. Kelley, Manager, Hillsboro Gas and Electric Company, Hillsboro, Tex.; discussion. Reading of paper, "Some Industrial Applications of Electric Current," Fred. A. Jones, E.E., Houston.

Afternoon session—Meeting was called to order at 2 P.M. Annual Report of the Secretary. Annual Report of the Treasurer. Election of Officers. Selection of Place of Next Meeting.

Social and amusement features—A local committee has been actively at work, looking after matters social and amusing for those attending the convention.

There was a street fair and carnival in Denison during the entire week, beginning May 15.

The special feature of the entertainment of the electrical visitors was as follows:

May 18, 8 P.M.—Entertainment at Elks' hall consisting of reception and smoker.

May 19, 9 P.M.—Masque ball.

May 20, 8 P.M.—Grand parade of the Rejuvenated Sons of Jove. Nine P.M., Rejuvenation of the Sons of Jove.

The headquarters of the Association were established in the Denison Hotel. All railroads granted a rate of a fare and a third on the certificate plan.

Address of the President of the Western Gas Association (Mr. O. O. Thwing, St. Louis, Mo.), Delivered on the Occasion of Its Twenty-eighth Annual Meeting, Chicago, May 17, 18 and 19.

In addressing you, gentlemen, who have so highly honored me by selecting me to preside over your deliberations at this time, I have in mind that our programme is a long and interesting one and that no time should be wasted by mere prolixity or verbiage. I will, therefore, be as brief as possible in my remarks.

Consolidation of Gas Associations.—At the Convention of the Congress of Gas Associations of America, in St. Louis, June, 1904, a plan was adopted for the formation of a committee to formulate a scheme for "A Single Gas Association Composed of the Men Engaged in the Gas Industry in North America." This committee was to be composed of two representatives from each of the Associations then in existence and of three delegates at large. The committee was duly appointed and has met. I am not aware that any report has been made by this committee up to the present time, but trust that the representatives from this Association will be prepared to report during the present meeting.

The tendency of the times is toward consolidation, or rather combination and organization of allied interests, and there is no doubt that, if a satisfactory plan can be evolved, much benefit would be derived from an organization of our gas associations under one directing board or committee. By means of such an organization, matters of large importance and questions of much complexity could be taken up by the head organization, whether called "Board," "Committee" or "Association," and followed to an intelligent and definite conclusion, leaving the practical and local questions to the consideration of the individual associations. There is no question that sustained and continued study of problems of importance has not been the practice in any of our Associations, but that members have been encouraged to write "as the spirit moved them," and generally upon any subject that they cared to select. In consequence, cumulative research has not been the rule, except where an individual member has been sufficiently interested to undertake it. A general supervision by a competent board of the work of all of our gas associations would certainly be beneficial both to them and to the fraternity at large, but to overthrow and annihilate the older associations and substitute in their places a single new one, is, in my opinion, extremely unwise and undesirable. For our gas associations are more than mere vehicles for formal discussion and investigation of topics of interest presented to them as societies. Their annual meetings are opportunities for reunions of old friendships and the beginning of new ones, among as broad-minded and capable a lot of men as ever associated together in the same line of business. I regard the personal interchange of thought, experience and opinion, which do not appear in the printed proceedings, as being of more value to the members individually than any part of the printed programme. There the young and inexperienced superintendent, who is puzzled over some course of procedure or worried over some condition, will meet those who are competent to advise him, and who will cheerfully do so; there the older and experienced man replenishes his fund of knowledge and learning from that of the enthusiastic younger one, fresh from the schools, and full of new methods, theories and discoveries. This feeling of fraternity and fellowship, of mutual esteem and willingness to assist, is especially noticeable in the Western Gas Association, and let us hope that it will remain a feature of the Association forever.

In looking over the records of the Western Gas Association I find, among the proceedings of 1887, a paper prepared by Mr. Frederick Egner, on "An American Gas Institute." The discussion following this paper reveals the fact that, for several years previous to 1887, both the American and the Western Asssociations had been endeavoring to form an association or board representing all the gas associations and all the gas companies in the country, and supported in much the same manner as the proposed "Single Gas Association" is to be supported by the scheme of organization submitted at the Gas Congress. The objects of the Association, Board, Institute, or what you will, were practically the same as those given as a reason for the consolidation of gas associations, namely: For mutual aid against unfair competition and unjust legislation; to gather and disseminate general information regarding matters concerning or relating to the industry; to more especially exert a watchful eye over the field of invention; to investigate, and, if possible, try all alleged improvements, reporting freely on their value, and to carry on general research and investigation for the benefit of the gas industry. It seems that all efforts to accomplish any undertaking of this kind had died of inanition, due to the indifference of those who

were expected to aid the plan financially, and the committee appointed to again take up the plan, as advocated by Mr. Egner in his paper, was compelled to report failure at the next meeting of this Association for the same reason.

In view of the doubtful prospects of the formation of a single gas association in the near future from those now in existence, I would recommend that the Western Association again take up the consideration of a Gas Institute, and, having shown during the past year that it was capable of carrying on, alone, a gas exhibit at a World's Fair, in spite of former failures, I have no doubt that something tangible is bound to result. There is no reason why the preliminary work on a project of this kind should not be undertaken by one body, put into definite shape as far as possible, and then submitted to the other associations for criticism, amendment and finally co-operation.

We Have Received a Proposal.—At the last meeting of the Ohio Gas Light Association it was decided by resolution to defer the location and time of the next meeting of that Association, pending a proposition to the Western Gas Association for the holding of a joint convention in May, 1906, with the object in view of a permanent consolidation of the two Associations. It is certainly flattering for a rather sedate and elderly maiden of 28 to be wooed by such a young and lusty lover; but would it be wise for her to encourage him in his attentions?

In the first place, it is generally understood that, while the young man has many good qualities and considerable ability, he is inclined to be rather wild and reckless and has grown to look down upon the old home where he was born and raised. He is of a roving disposition, having been seen in Pittsburgh this year when he should have been at home attending to his duties. It has also been whispered about that lately he has been living beyond his means and is hardly in the position financially to assume the burdens of matrimony.

However, this proposition from the Ohio Association is one of grave importance to the two Associations, and when it is presented before this meeting I hope that we will have a full attendance and that no hasty action will be taken in the matter. If there is any prospect of action on the proposed organization of American Associations in the near future, I cannot see any reason for previous consolidation of any two or more existing Associations pending such action. It would be best for them to preserve their integrity as distinct associations in order that their individual influence may be felt when the scheme of consolidation is reported.

Municipal Ownership.—I wish for a moment to call your attention to the present agitation of the question of municipal ownership. Hardly a daily paper or a magazine can be read without finding some article exploiting the subject. Glasgow is sending her missionaries to this country in large numbers, if reports are to be believed, and they are assiduously spreading her gospel. The literature of our Associations has covered this field thoroughly and well, but that literature is not read by the public. I believe that this subject is serious enough at the present time to justify the appointment of a special committee to investigate the best methods of presenting the gas companies' side of this question and the protection of their interests. The formation of State Gas Commissions, to be composed of men of intelligence and integrity, can well be considered in this connection.

Western Association at the World's Fair.—At the Louisiana Purchase Exposition, held in St. Louis, in 1904, the gas industry, through the efforts of the Western Gas Association and its members, received official recognition for the first time at any International Exhibition. In the name of the Western Gas Association, one of the most complete and attractive exhibits in the Liberal Arts Building was installed by Mr. F. H. Shelton, our then President, and personally supervised, during the Exposition period, by Mr. F. R. Persons. These gentlemen contributed freely of their time and brains to the success of this undertaking, and its unqualified success, now a matter of history, is an honor both to them and to this Association. A report and history of this exhibit will be presented for your consideration and will prove most interesting.

London Exhibits of Coal Tar Products.—Near the booth of the Western Gas Association, in the British section of the Department of Chemical and Pharmaceutical Arts, were located two exhibits that attracted deserved and admiring attention from the visiting gas men. One was by the London Gas Light and Coke Company and the other by the South Metropolitan Company, also of London. Among the products exhibited, I will mention the following as showing the extent of the industry and the completeness of the exhibit. The samples were furnished by the Gas Light and Coke Company's Tar and Ammonia Products Works, at Beckton:

Refined tar, anthraquinone, picric acid, sulphur, toluol, benzol, naphtha, aniline salts, alizarine, pyridine, crude bases, anthracene (40, 80 and 90 per cent.) naphthaline in candles, balls, flakes, powder, rice, rock and tablets; dinitro-benzol, nitro-naphthaline; anhydrous ammonia and ammonia, sp. gr. .880; ammonia chlorides, carbonate, ferrycyanide, nitrite and sulphite; creosotes; green oil, anthracene oil, sharp oil, crude light oil, carbolic acids; potassium and sodium cyanide and prussiates; Prussian blue, etc.

We are all aware that the market for gas works residuals, particularly tar, is steadily weakening. The greatly increased production, due to the recovery of tar from the manufacture of coke, has demoralized prices and as a last resort many producers are compelled to use their tar for fuel. In this country of cheap coal tar is too valuable a product to be used as fuel. Why should we continue to reduce our tar only to such products as pitch, crude creosote, light oils and occasionally naphthaline, while practically all the more valuable products are imported into this country? Why should we not follow the same course of ultimate refinement and preparation of our residuals for special markets, as these companies do, instead of depending upon a general market for our crude products?

Papers.—A glance at our paper list shows a goodly number of contributions covering a wide field of interesting subjects. "Cement Joints," by Mr. J. D. Von Maur, is a history of experiment that points its own moral. "Use of Tar as Fuel in Bench Firing," by Mr. F. C. Sherman, tells us the way to do something that we hope not to be obliged to do very long. The "Wrinkle Department," edited by Mr. W. A. Baehr, is as ample and up-to-date as the editor himself. Mr. Irvin Butterworth has discovered a way to "Prevent Stoppages in Service, Meters and House Pipes in Cold Weather," and we are all glad that he is to tell us about it. "Acetylene," that former bogey of the gas man, will be treated of by Mr. J. M. Morehead, who was its original captor. Mr. B. E. Chollar will furnish us with a philosophical discourse on "The Evolution of the Engineer." Mr. K. M. Mitchell and Mr. T. D. Miller will occupy the arena exploiting the respective merits of "Kansas Oil" and "Texas Oil." "The Practical Enrichment of Low Candle Power Coal Gas with Benzol" will be presented by Mr. F. B. Wheeler, who makes both and ought to know. Mr. W. B. Calkins will tell us how "Coal Sampling and Testing" should be done. "The Ideal Corporation" has been evolved by Mr. N. D. Cochran, and we will learn whether he wishes to promote it or not at this meeting. "The Rotary Blower and Exhauster: Its Construction, Efficiency and Application," explained by Mr. George C. Hicks, Jr., will inform us about a subject on which ws have hitherto had little literature. Mr. O. N. Guldlin, who did yeoman's service in securing classifications for our industry at the Fair, will relate his "Experience as an Exhibitor at the World's Fair."

Necrology.—Death has laid a heavy hand upon our Association during the past year and has taken from us some of our best loved and most able members:

A. B. Slater, Providence, R. I.,	Died June 26, 1904.
Wm. Henry White, New York City,	" July 3, 1904.
Chas. W. Blodget, New York City,	" Aug. 2, 1904.
Oscar B. Weber, New York City,	" Sept. 16, 1904.
Chas. E. Hess, Jackson City, Mo.	" Dec. 22, 1904.
James Somerville, Indianapolis, Ind.,	" Feb. 13, 1905.

A little later we will lay aside our business for a time and join in paying tribute to the memory of these friends of ours who are no longer here.

Gentlemen, the Twenty-eighth Annual Meeting of the Western Gas Association is now in your hands.

[Report of Proceedings.—Continued from page 810.]

TWENTY-FIRST ANNUAL MEETING, OHIO GAS LIGHT ASSOCIATION.

HELD AT PITTSBURGH, PA., MARCH 15, 16 AND 17, 1905.

SECOND DAY—AFTERNOON SESSION.

THE QUESTION BOX.—*Continued from Page* 810.

Mr. Doherty—Gentlemen; I will not stop to read it, but I will call your attention to what is inserted here as an appendix. It should have been an appendix to the preface or introduction, but it was misplaced in the hurry of getting the edition out. The communication therein set forth is from a man who signs himself anonymously, using the title

of "A Supply Man." It is in answer to a letter which was sent out asking for individual advertisements in the Question Box. The letter was purely an invitation and the response which was furnished to the "Progressive Age" was entirely uncalled for. So I wrote a communication to the "Progressive Age" also in answer to "A Supply Man," and asked him to come out from behind the tree so that we all might know who it was we were addressing to the better realizing of the motives behind the attack. I want to assure the members of this Association that we have not attempted to even use any pressure at all to receive advertisements for the Question Box. We have simply called attention to the fact that we believe it is a good medium for advertising, and if they care to avail themselves of it their advertisements will be accepted. I still believe that it is an excellent advertising medium. I am sorry that any of the proceedings of the Association have to carry any advertising matter, but our ideas of Association expenses are so extremely modest that it is impossible to do any great amount of Association work unless the funds can be secured from some external source. Without any great injury to our proceedings we have advertized in them and as this publication last year was sent to every gas company in the country, and as it is used very largely as a reference book, it is read by every man interested in the gas business and is referred to repeatedly by every man interested in the gas business. My idea was that it would make a valuable advertising medium; but "A Supply Man" goes into print claiming that the Editor of the Question Box and the Ohio Gas Light Association are holding him up. I replied to him as best I could, in order to get the man who wants to sling "mud" to "come out from behind the tree."

The President—You have heard the presentation of Editor Doherty's Question Box. It is a very valuable contribution to the literature of the Ohio Gas Light Association. What do you wish done with it?

Mr. Robb—I move that the report be accepted and that the Editor be requested to continue the work. (Motion seconded.)

Mr. Doty—It seems to me that the Ohio Gas Light Association is too deeply indebted to Mr. Doherty to simply receive and accept such a report as this. This work is positively stupendous. No one can possibly appreciate its magnitude by simply looking at the book or by hearing the Editor read the introductory remarks. I have just been going over, with my neighbor on the right, some of the names of the gentlemen who have answered questions in this Question Box. I find that they are men of recognized authority. I see that Prof. Stillman, of Stevens' Institute, one of my old instructors, has taken the pains to go on record in the Question Box of the Ohio Gas Light Association. Mr. William Kent, Professor of Mechanical Engineering, Syracuse University, another one of my valued associates, has taken the pains to go on record. Many more recognized authorities in the gas world have furnished contributions to the Question Box. Now certainly the work that can command the admiration and support of men who are eminent in their professions is a work of which the Ohio Gas Light Association and its Editor can well be proud. I cannot at this particular moment say all I would like to say upon this subject. It is too much. It is overpowering. It reminds me somewhat of the old Methodist minister who attempted to preach a sermon on creation, and he said he had a great, big subject, but it caved in on him. (Laughter and applause). I feel it is impossible to even comprehend the magnitude of the task which Mr. Doherty has performed or to secure the benefit which I know every gas man will secure by a cursory examination of a work of this kind; but I am sure that in the quiet of our homes and offices and in the works this volume will give us all information which we will appreciate and then be able to recognize its true valuation. I would like to move, Mr. Chairman, if I might interject a motion while a motion is still pending, and I am sure the members of the Ohio Gas Light Association will pardon any breach of the kind, that we tender Mr. Doherty a rising vote of thanks for his magnificent work and his indefatigable energy in getting contributions from so many prominent people in the gas world and recording them in the Question Box.

Mr. Schwarm—I take pleasure in seconding the motion.

Mr. McDonald, (Ky.)—I second Mr. Doty's motion most heartily. There is in my opinion about 900 pages of first-class matter here and only one or two pages that I would like to have seen omitted. Mr. Greenough's letter was probably written at a time when he had a little touch of dyspepsia and when he came to the last manly, frank letter which he wrote, I think it would have been gratifying to his friends if that one letter had been published and the rest of the correspondence omitted. However, Mr. Doherty has had such an immense amount of work that if that was an error of judgment, I think we can all well pardon him for it, and I join most heartily in seconding Mr. Doty's motion.

Mr. Norris—I would like personally to express my appreciation of this work and call attention to the fact that the answers to these questions represent the work of more than one man. I know of any number of cases where answers were sent from our own office, the answer being gone over carefully and revised by half a dozen men after a full conference and discussion of the subject. While it looks like the answer of one person only to see the name of but one person at the bottom, yet it really represents the work of many more whose names do not appear.

Mr. Osbourne—As illustrating the practical importance of this work, I will say that the two copies of last year's Question Box which were obtained by our Company have been used in our gas office and works until they are about worn out, showing that the men about the works have taken a great deal of interest in the results of Mr. Doherty's labors as embodied in the Question Box. Many of our employees have complimented the work and spoke particularly of the fact that it is couched in language they can understand. It is not like some of the text books that the boys get hold of which they cannot understand. The language is plain and concise and usually to the point, and I know quite well, in my experience at least, that the questions are answered in some instances by those who are not used to expressing themselves on paper, so that undoubtedly the Editor has had to perform considerable labor in work of this kind. I do not think we can compliment the work of Mr. Doherty too highly.

The President—The Association is certainly deeply indebted to Mr. Doherty for this Question Box, more so than any of us will be able to express. Indeed many of us do not yet know the benefits which we may hereafter derive from his work. I was a member of the Executive Committee when it was proposed to go into this campaign to get new members and also inaugurate the present method of handling the Question Box which has been pushed so successfully by Mr. Doherty. The Executive Committee were short of funds. The Ohio Gas Light Association is always doing more work than it has money to carry out as it would like to do. Mr. Doherty generously said to us, "You go to work; enter upon this campaign and publish the Question Box, do the things that ought to be done and I will put up the money, and whenever the Association gets in shape to do it, it can reimburse me." I have no statement from anybody in regard to the amount of money that has been put into this work but I would not hesitate to say that several thousand dollars have been put into the work of getting out this Question Box, and publishing it. I refer in this statement to the Question Box of last year. We have reimbursed Mr. Doherty partially for this expenditure, but partially only. He is still continuing the work, and still has confidence in the Association backing him and supporting him in this work. Some day he will get his money back, but we are certainly much indebted to Mr. Doherty for the confidence he has reposed in our Association, and the work he has done for it. He is really the financial backer of the Association in this part of the work. I think one of the results I appreciate the most, by a study of the Question Box, is to ascertain the number of things which it demonstrates to me that I do not know. At times I have read over a number of these questions and have wondered how many of them I could answer myself. I frequently found that questions are propounded which I am unable to answer, which started me thinking and I try to look up some question and see what information I can obtain upon it. The Question Box has been extremely valuable to me as I am sure it has been to each member of our Association.

A rising vote of thanks was then tendered to Mr. Doherty, amid applause, and the motion was unanimously adopted to earnestly request Mr. Doherty to continue in his work.

Singling Out Some Questions.

The President—Several questions the members have requested to be discussed. One of them is this:

> "Is it advisable for a company, operating a coal gas plant having an output of between 30 and 40 million cubic feet per year, to install an auxiliary water gas apparatus for the purpose of utilizing its coke and tar?"

Whoever asked the question was not satisfied with the answer in the Question Box and has requested that it be placed before the Association for discussion. The Chair would like to have some member volunteer an answer.

Mr. John J. Power—I am the one who propounded that question for the reason that the Company I am connected with at Cumberland, Md., has serious difficulty in getting rid of its tar and coke—more especially the coke. We have adopted every means possible by advertising and soliciting to get a sale for our coke, and it is almost impossible for us to

sell it. Consequently there is only one thing to do, either to give it away or utilize it in the way suggested in the question. So far as tar is concerned, the market for it has gone almost to the bottom. The bottom has fallen out of it, and we find great difficulty in getting a bidder at all in our town. I do not know how the rest of the members of the Association are situated in regard to tar sales, but I know if we could get 3 cents a gallon for our tar we would gladly accept the offer. We make a fine coal gas tar.

The President—Now, gentlemen, this member wants a little information. Any of you who can give it we would be glad to hear from. Mr. McDonald what would you say in answer to the question.

Mr. McDonald (Ky.)—What was the amount of output?

Mr. Power—From 30 to 40 million cubic feet of coal gas per year.

Mr. McDonald—I think by all means that the gentleman should install a water gas set.

The President—What would you think about that, Mr. Clapp?

Mr. Clapp—I would put in a water gas plant and utilize all the surplus coke that I could not sell. I thought of doing that myself, but I have found a market for my coke now, and I can sell twice as much coke as I have to furnish. I have to bring coke in.

Mr. Osbourne—Referring to the statement the gentleman made that he used every method possible to get rid of his coke, I take it for granted if that is true then possibly he has no demand for coke except for uses other than heating houses, etc. My experience has been that there is no trouble to get rid of coke in a country where they need fire 9 or 10 months of the year like in Ohio, Indiana, Illinois, Iowa and the Northern States. There is a good demand for it or it can be stimulated at least to a certain extent, as the gentleman indicated who last spoke. He said that he could sell more coke than he could make. I have had some experience. One place where I went they had coke stacked up in a pile bigger than an ordinary sized barn, and didn't know what to do with it. It was costing the people to buy it $1 50 per ton and before we came away from there they were getting $5 a ton for it and did not have any to sell. I think coke at $5 a ton could be better utilized by selling than by making water gas out of it. A setting is a nice thing for helping out and is the best auxiliary you can get any place where our coal benches go down and we have trouble of that kind and need something to stretch our output for a short time. In cases of that kind a water gas set is the best thing I know of to help out.

Mr. Congdon—I would suggest a possible outlet for the gentleman's coke. The little town of Frederick is right near Cumberland, Md., and I had some experience with the situation at that point. I wish I had known that he had coke for sale. We had a water gas plant and no coal gas plant at all. I think it is very probable he could find a sale for his coke there if he figured it low enough.

Mr. Power—What will you give for it?

Mr. Congdon—I am not there now. I will have to refer you to the new management.

Mr. Power—We have offered it to all of the places around there. The trouble is that the freight rate to Frederick or any point adjacent is so high as to preclude its sale. They will take it from Connellsville or Fairmount at a less rate than they will from Cumberland. We could get a good market for it in Washington if we could get proper freight rates, but we cannot secure proper railroad rates. We would be very glad to sell our coke. In fact, we gave to all the leading industries in the town tons of coke to sell in order to see if we could induce people to buy it or create a demand for it, but we could not get them interested. The price of coal, you must remember, is very low at Cumberland. It is $1.50 per ton, and sometimes less. That also is a condition against which we have to contend.

Mr. E. H. Schnierle—What kind of gas coal is the gentleman using?

Mr. Power—We are using Youghiogheny, Osceola coal and Fairmount coal. We use the best Fairmount coal we can get, and I think we have an excellent coke. We use fairly high heats and consequently get a good, firm coke.

Mr. Klumpp—I think the question of putting in a water gas set, so far as Mr. Power is concerned, is simply a question of economics entirely. If he finds he can make water gas cheaper and so utilize a large proportion of his coke, then he ought to put a large water gas set in. Of course, if he cannot make his water gas cheaper, he ought not to put it in. I think the question resolves itself into one of dollars and cents as to the best way to dispose of his coke. It is not a question of whether he shall or shall not put it in, but it is a question of how to get the most out of his coke. For my own part I would say to put in a water gas set.

Mr. Power—The reason I asked the question in a gathering such as this is because I know full well there are members who have a coal gas plant and an auxiliary water gas plant. Now, of course, their knowledge of the situation in their own individual cases would lead to a discussion of this subject which would be of more benefit than to hear an expression of opinion from someone who was not fully acquainted with the advantages and disadvantages. It is for that reason that I have asked for information. It is not alone for my own information, but for the information of many who are probably situated just as we are.

The President—Mr. Low, I believe you have a combination plant, haven't you?

Mr. Low—Yes; but I find a good demand for my coke. I use my water gas plant simply to help me out in emergencies.

The President—Another question which has been sent in with the request to hear it orally discussed is:

> "Has any member had any experience or is able to give the results of any experience in turning a plant from an artificial gas plant into a natural gas plant?"

Any member here who has had experience on that subject we will be glad to hear from. It is evident somebody who has been operating an artificial gas plant is about to change it into a natural gas plant.

Mr. H. G. Owens—That was the case at Coshocton, O., where an artificial gas plant was used for natural gas. There was but very little trouble found in making the change. Probably the greatest trouble was with the drips that had been put in. Some of them were installed in such a way that the water soon became dried up and allowed the gas to escape. We had to cut those all out. We had very little trouble with leakage in the joints which had been put in with lead and cement. In a few cases they needed some repairing, but as a rule we found very little trouble with it. We, of course, laid a belt around the city for the high pressure, carrying about 15 to 20 pounds on the belt and using a regulator to reduce it to city pressure. We carry about 7 or 8 ounces through the winter season and use a regulator to keep it at about the same pressure. At the present time we have 3 regulators, an 8, a 6 and a small one, which we found necessary to put in at the end of the line to help out some customers who were too near the end thereof to give them steady pressure.

Mr. Schnierle—I am the one who asked that question, and the reason I asked it was this: I expect within a very short time to go against that proposition of changing from artificial to natural gas. One of the gentlemen this morning had a paper that was very interesting to me, because it treated of the different styles of joints, how to repair them and how to make them tight. I have been at Salem, O., for 3 years. When I took charge of the plant nearly all of the pipe that they had in the ground was laid with cement joints. That is, there were 4 cement joints, and the fifth was a lead one. What I wanted to know from the gentlemen here, who have had more experience than I have had, is whether these cement joints will be able to carry the natural gas or whether it would be cheaper to lay new pipe? Would it be more profitable in the end to repair any leaks which we might find after testing this old pipe or to lay a new pipe? It is a proposition with which I have never had any personal experience, and I would consider it a personal favor if there is any member here who would enlighten me on this subject. We have put in about 3 miles of main pipe within the last 3 years which was laid entirely with lead joints. I superintended the laying of that pipe myself, and I am sure that those lead joints are made as good as it was possible to make them, because I have had a great many years of experience in the laying of pipe and what I am talking about. Another question I wanted to ask of the gentlemen here present was as to a system of testing these pipes before natural gas is turned in? My idea was to lay new feed lines on the principal thoroughfares, and simply using the other lines on intersecting streets, to take the streets in rotation and cut them off at the end where they intersect the main feed lines and test each street separately, thus converting the pipe, street by street, from artificial gas to natural gas. I would consider it a personal favor if any gentleman here could enlighten me on that subject.

The President—For the benefit of Mr. Schnierle I would just say that I turned natural gas into an artificial gas plant at Ashtabula, O., about 3 years ago and had no trouble whatever. I am expecting to turn natural gas into an artificial gas plant in another town of 6,000 people within the next month or two, and I will say to Mr. Schnierle that if he will come to that plant at that time I will be glad to let him know when it will be turned in, so that he will be able to be on the ground and see how it works.

Mr. Schnierle—I would consider it a great favor if you would notify me so that I might be present at that time.

The President then introduced Dr. H. B. Harrop, who, as Chairman of the Board, presented the following

REPORT FROM THE BOARD OF REVISION:

The work accomplished by the Board of Revision during the year just ended has exceeded the intent of the convention at Cleveland that inaugurated it. Eighteen of the 20 members have been selected. The 1903 and 1904 issues of the Question Box have been revised, and the subject matter utilized has been enriched by special contributions from the original Question Box contributors, many other gas engineers and managers not heretofore interested in the Question Box, and other practical and scientific men of note. The British Gas Associations have been invited to co-operate in the work and have responded generously. The aim is an international text book of the gas industry, to be based on the accumulation of matter brought together in the Question Box, and to be revised and reprinted anew each year. This year's revision has been completed and was partly in type when external causes, outside the control of the Board of Revision, brought the printers to a halt. In place of the finished volume, which was to have been presented at the Pittsburgh meeting, this repert is offered.

The work of organization, the nature of the classification adopted, and the character of the detail work done will be briefly described. The completed manuscript of the revision is in the room and awaits the disposal of the convention.

The resolutions inaugurating this work at last year's meeting allowed for a Board of from 10 to 20 members. The constitution of the Board of Revision at the present time is as follows—two vacancies remain, owing to indecision as to who are the best available authorities for those departments of the work that are yet to be covered:

Bredel, F., Milwaukee, Wis.	Mason, J. T., Milwaukee, Wis.
Butterworth, I., Grand Rapids, Mich.	Mead, C. W., Chicago, Ills.
Chollar, B. E, Kansas City, Mo.	Schniewind, F., New York City.
Doherty, H. L, New York City.	Shattuck, J. D., Chester, Pa.
Faben, C. R., Jr. Toledo, O.	Slater, A. B., Fort Wayne, Ind.
Harrop, H. B., Milwaukee, Wis.	Simpson, M., Kansas City, Mo.,
Hicks, G. C. Jr., Connersville, Ind.	Steinwedell, W. E., Cleveland, O.
Lea, H. I., Pittsburgh, Pa.	Stone, F. W., Ashtabula, O.
Lomax. C. S., Everett, Mass.	Wilson, S. T., Denver, Col.

Gentlemen, in all modesty I congratulate you on the membership of the Board which is to be responsible for this work that the Ohio Association is undertaking. Next year's edition will have to cover some subjects not handled to date and it will be necessary to request the services of some special authorities. To allow for these new members, and since only two vacancies remain, it is recommended that the Association raise the limit from 20 to 25. It is only necessary to say that, in view of the character of the organization adopted, a board of this size will not prove unwieldy.

With the exception of those actively engaged on the revision, no one can realize what an immense undertaking it has been. And it should not be forgotten that the work has been done at odd moments by men whose time has been fully occupied in their regular pursuits.

After the classification and method of revision had been fully considered and outlined, sections of the work were assigned each to the proper reviser, and thus each became responsible for the completion of the first draft of his own section. Prior to this the many references to current gas literature contributed as answers to the Question Box had been looked up and abstracts bearing on the several subjects, together with other references procured independently, accompanied the assigned matter. [Thanks of the Association are due to Mr. Paul A. Degener of the Milwaukee Gas Light Company, for searching out and abstracting the most of the references, and for untiring work along other lines tending to make the revision a success.] After the revised sections had been completed they were exchanged among the members of the Board and subjected to further scrutiny so that the accuracy of no single statement should rest with any one authority.

The work done on the revision was not done merely by the members of the Board. It was planned to interest every gas man known to have special experience in any detail of the industry. Aside from the correspondence carried on directly from the office of the chairman, all of the sub-committees took up the same style of campaign. The spirit in which the gas fraternity met these appeals was gratifying. About 1,000 personal letters were written from the office of the Chairman, and it is a matter of record that of all the members of the gas fraternity and scientific authorities addressed at home and abroad, only 9 letters remain unanswered.

The active help of Mr. Walter King, Editor of the *Journal of Gas Lighting*, was early enlisted. Too much credit cannot be given Mr. King for the broad spirit he has shown and the unselfish manner in which he has aided the movement among the British gas engineers and managers. Correspondence was undertaken directly by the Chairman with the several British Gas Associations and it is a matter for special congratulation to be able to say that replies were promptly received from the Presidents of the Midland Association, the Manchester District Institution of Gas Engineers, the Southern District Association of Gas Engineers and the North of England Association, expressing hearty commendation of the plan. The 1905 Question Box contains the answers forwarded from Great Britain in reply to this year's question lists. The contributions bearing on the 1903 and 1904 material received from Great Britain in reply to special interrogatories prepared by the Board will be found in the text of the revision.

The British Institution of Gas Engineers has not yet committed itself fully to co operation in the plan, owing in part, as was brought out by correspondence, to the fact that the Institution has been largely responsible for the monumental gas exhibit in London recently closed, and did not feel able to take on extra responsibility at the time. But it appears that the suggestion was not unfavorably received, as witness a letter received from the Honorable Secretary of that body, from which the following is extracted:

"I sympathize entirely with you in the work which your Association is carrying out. I will bring the matter before the Council of the Institution at their next meeting, and will ask them to seriously consider in what way they can best co-operate with you. Wishing you every success in your project, I am, with kind regards, yours very truly,

"(Signed) J. W. HELPS."

The arrangement of the material into some definite order was a problem of the first importance. The selection of a suitable classification required much thought, and special attention is called to that finally chosen. There was the fact to be faced that much of the information to be handled was extremely rudimentary, while another part of it was advanced beyond the possibility of grasp or interest to many who would use the revision as a reference book. In this case, however, no distinction was possible.

The dual nature of the general subject covered (a technical business) seemed to suggest treatment under two heads: (a) Engineering; (b) commercial. But no advantage could be found in the arrangement.

It was suggested that the revision be divided into several parts, all but one to deal with the principal aspects of the engineering end of the industry, while the remaining part covered the business end; but it will be realized that every engineering consideration, no matter how technical, has its money phase.

After a study of the chief text books, beginning with "King's Treatise," and some "charge order" classifications familiar to gas men, a classification was outlined, which, after being tried out during the compilation of the revision material, and undergoing some changes, finally took shape as below. Everyone is not so skillful in using an index as a professional librarian, and, therefore, a disposition of matter is necessary which will lend itself to the quickest and least troublesome location of any desired piece of information. For the average gas men this will be one following in a general way: (1) The successive steps in manufacture, distribution, collection, etc.; and (2), the system of charge orders and accounting with which he is more or less familiar.

CLASSIFICATION ADOPTED IN THE REVISION.

MANUFACTURE:

Coal; kinds, sources, examination, storage, handling.

Carbonizing (or retort house); benches, carbonization, charging and drawing, operation of retort house as a whole.

Condensing and Scrubbing; theory, construction and operation.

Purifying; chemistry and operation.

Other Gases than Retort Coal Gas; (a), oven gas; (b), wood gas, rosin gas, oil gas, etc.; (c), natural gas; (d), producer gas, such as the regular form and the Mond, Dowson, Dellwik, etc.

Water Gas; theory, construction and operation, from handling fuel up to purification.

General Operation of Gas Works; enriching and mixing gases, testing finished gas, metering, storage, power and gas works machinery.

Manufacture of Residuals; coke, tar, ammonia, sulphur and cyanides, carbon, lampblack, waste heat, etc.

DISTRIBUTION:

Delivering Gas; mains and services, gas flow, pumping gas, governors, distribution problems, construction and maintenance.

Meters; design, construction, installation and maintenance.

Appliances; lighting, cooking, heating, water heaters, industrial and power.

SALES (OF GAS) AND COMMERCIAL POLICY:

Desirable and undesirable business, keeping existing business, getting new business, relations with consumers, collections.

GENERAL COMMERCIAL AND ENGINEERING CONSIDERATIONS:

Accounting and record in general, general engineering considerations, general business policy, labor, administration, legal, taxes, educational.

Acknowledgment is due to Mr. E. Haase, Secretary of the Milwaukee Gas Light Company, for efficient help in preparing this classification. A little study will convince anyone that this meets the requirements, not perfectly, for it is not to be believed that such a body of material has any inherent logical shape or that its several parts are bounded by any natural lines of demarcation, but as well as or better than any other form it can take.

Some changes will undoubtedly be made in succeeding editions. Photometry, for instance, instead of being treated under the head "Operation of Gas Works," may be broadened and transferred to "Lighting Appliances," where it will cover not only value of gas but also efficiency of burners, spherical candle power, luminous intensity and practical illumination. As another instance, both the United Coke and Gas Company and the Semet-Solvay Company have promised their co-operation, and we may expect to see oven gas removed from under the head "Miscellaneous Gases" and given full treatment in its own section.

The question and answer form is not used in the revision. Instead, the material is distributed among a definite number of topics, beginning with coal in its relation to gas manufacture and ending with the most general commercial considerations, following the order of a logical discussion. The topics have been kept distinct one from the other to facilitate criticism and further revision. There is no special section for purely scientific matters, these, along with costs, etc., being distributed throughout the work and treated immediately with the operations to which they relate.

Material drawn from the Question Box, from the proceedings of this and other gas associations, from works of reference and technical magazines, and personal contributions specially contributed by others than the members of the Board, are carefully credited both in justice to the authors and to enable anyone to trace back to authorities.

With a view to beginning a complete logical discussion of the gas industry, considerable material has been incorporated from sources other than the Question Box. Most of the matter from the 1904 proceedings of the Ohio Gas Light Association is used in the revision, some from preceding years and much from other Associations. The files of the American and British gas periodicals have also been utilized. The excellent summaries found in the "Progress Reports" have not yet been fully incorporated, but there is no good reason why this should not be done in the next revision. The Progress Reports, the Question Box and the revision are parts of one general plan, and it is scarcely necessary to suggest that anyone making use of the present revision refers also to the Progress Reports for 1903 and 1904, covering 7 years' progress, and to the 1903 and 1904 Question Boxes, all of which may be found in the Ohio Proceedings.

The object sought by this movement in the Ohio Association, of which the revision is a part, is an ambitious one and so far has been signally successful. It is now recognized both at home and abroad that the gas business is going to be raised from a plane in which "rule of-thumb" all too largely predominates to the scientific basis of a truly technical industry. We realize the danger on the other hand of making our work too purely academic. The Board has tried to show the practical application of matter generally thought to have only academic interest. In working over the material we have allowed it to suggest to us new questions for the Question Box that would bring out additional and clearer information. Many subjects have been referred to the Research Section for investigation. It is hoped that the Research Section can be put on an active basis this year; its help is badly needed. In addition to the material already mentioned as having been drawn from proceedings of associations, books of reference and technical magazines, the Board has had the help of men of science and other authorities in America and Europe.

It is recommended that the Association undertake to map the principal gas coal fields in the United States and determine the typical characteristics of the several fields and outline a method of identifying case samples; that a study be made of all analytical tests in common use in the gas industry, to see if some step cannot be taken looking to the adoption of standard methods that will give rapid and uniformly reliable results; and that something be done toward indexing recent gas literature, with particular reference to foreign publications. These undertakings may be assigned to appropriate committees under the supervision of this Board.

The Board has caused a very thorough compilation to be made of every available fact or figure on the specific heat of gases at high temperatures, and the conclusions reached afford data for some of our bench furnace calculations that have not existed heretofore. A study of luminous, Bunsen and blast flames has been prepared by Mr. P. A. Degener; and Mr. J. D. Shattuck has compiled and compared the the various mathematical formulæ for flow of gases. Special acknowledgments are due Profs. James Boyd (Ohio State University); A. H. White (University of Michigan); and S. W. Parr (University of Illinois), for hitherto unpublished thermo-chemical data on the Parr fuel calorimeter; and Jos. W. Richards (Lehigh University) for a complete discussion of original methods of calculating composition and volumes of producer gas, flue gas and products. England, Germany and France are represented by communications from Prof. Vivian B. Lewes, Dr. Walther Hempel, H. LeChatelier, and others.

Exclusive of special articles by members of the Board, a few important contributions may be mentioned: Boiler water analysis, Dr. Bruce, Kennicott Water Softener Company; ammonia concentration, George Osius, Michigan Ammonia Works; improved meters, Wm. J. Serrill, U. G. I. Company, Philadelphia; holder construction, H. A. Carpenter, Riter-Conley Company, Pittsburgh; fuel economies, C. Williams, Madison; naphthaline, W. J. A. Butterfield (England), author "Chemistry of Gas Manufacture;" carbonizing temperatures, V. F. Dewey, Detroit; fireclay materials, Fred. Bredel, Milwaukee; coke oven gas, the Semet-Solvay Company; prevention of naphthaline troubles, Chas. E. Botley (England); meters, Wm. McDonald, of D. McDonald & Co., Albany, N.Y.; through retorts vs. inclines, Frederick Egner; topics on sales, Messrs. Rutledge, Stannard, Perkins, Frueauff, Haase.

It is not claimed the revision has said the final word on any subject. But the matter given represents careful work, and every effort has been made to fall back on reliable sources. Then there is always the next year's edition which will amend and amplify.

Nine-tenths of our gas technical words are not to be found in the latest dictionaries. Perhaps it will not be so in a few years. The U.S. census for 1900 does not mention the production of gas among the chemical industries. It may be that we can remedy this in the next census. The revision should represent a constant growth. Next year's edition should be 100 per cent. better than this. The hardest work has been done and all seems to be plain sailing ahead. But if we are to make a genuine success of it every member of every Association must get in and help. The Board could make use of a great number of auxiliaries or associates, and an invitation is hereby extended to every gas man who is willing to help in any way whatsoever to let his willingness be known.

The Chairman feels that he is not the ideal candidate for this position. He has undoubtedly impressed his individuality on the report to a more marked extent than any other single member of the Board, especially as all the work done by the several members on assigned sections has passed through his hands and suffered alteration in the effort to mould all the material into a homogeneous, connected discussion. The treatment accorded the scientific aspects of the industry has perhaps been unduly full, and the mechanical or strictly engineering phase has not received the consideration it would in the hands of a construction expert. The sales or commercial phase will also be found deficient, but this is due chiefly to the very poor showing it has made in the Question Box heretofore, and to the great difficulty experienced in convincing the sales, accounting and record men that their department is reducible and should be reduced to clear discussion on paper just as the technical subjects already are. In laying down this task the Chairman wishes to ask the thanks of the Association for the members of the Board who have helped him so ungrudgingly in the midst of other duties, for the individual members of this and other Associations and our technical and scientific friends, and for all others who have aided in the work, including Mrs. Herbert B. Harrop, who undertook part of the compilation and carried on most of the correspondence. Gentlemen, the Board and the Revision are in your hands. H. B. HARROP, Chairman.

Dr. Harrop then added—I might interject right here it must be evident from the matters that the Board has succeeded in accumulating and the work that the Ohio Gas Light Association is doing, that we are having co-operation from recognized authorities in the gas business, men who are known to be posted on what they are talking about, from

all over the United States—not only the members of this Association, but the members of the American, the Western and the various State Associations. It looks as though it were coming to be recognized more and more that the Ohio Gas Light Association, not such as it has been for the last 21 years, but especially by reason of the work it has been doing for the gas industry the last 2 or 3 years, is an Association national in its scope. People contribute to our work who would never think of giving anything to some of the other organizations known as State Associations. In spite of the fact that we are handicapped by the name of a State Association, they realize that the work we do is of as much importance as the work done by any of the so-called national organizations.

Discussion.

Mr. Doherty—I think we are now up to a point where the members of this Association ought to have a heart-to-heart talk with themselves. They realize perhaps the load which has been carried by such members as Dr. Harrop. The work done by the Chio Gas Light Association will certainly, to say the least, rank with the work done by any other Association in the world. Now, I do not think there is any Association, in the gas or other industry, which has more loyal members than the Ohio Gas Light Association, or more faithful workers. But in spite of that fact there is not a man to-day who is doing work for the Ohio Gas Light Association, who would not very much like to drop that work, because of the time required in its performance and because it interferes with his own private business. I know that Dr. Harrop is in that same position, because I have been in an adjoining room talking with him for quite a while. They need encouragement to go on with that work. When they receive criticisms it is discouraging. There are not less than 5,000 men in the gas buisness who are greatly interested in it. There are not less than 10,000 men in the gas business in this country who will be considerably benefited by the work done by this Association. Now, I know it is regarded by many people that the growth of 188 members last year and 332 members this year is a remarkable growth. For my own part I do not think it is a growth which gives the work that this Association is doing the support it deserves. Now, I do not want to preach to the members of this Association. They are doing perhaps all that we are asking them to do. I as one of the members have neglected to help on a great deal of the work I should have helped on. But there are a number of men who are devoting a great portion of their time to this Association. They could take that same time and employ it elsewhere to very great advantage financially. If the members of this Association would be more earnest in their support of the work of the Association, I venture to say there is not a man who is doing department work for this Association that would not gladly increase his efforts, if that were possible. I do not think there is a department editor or any man doing work for this Association but who believes that while the work is receiving pretty general support from the gas fraternity, the Association in itself is not receiving the support it should have. I originally volunteered to see that this report of the Revision Committee was printed. I volunteered that the funds would be forthcoming. At that time I expected more people would avail themselves of the opportunity to advertise in the Question Box. Invitations were sent out. A man who signed himself, "A Supply Man," jumped into print and accused the Association of trying to hold up the supply people. His article was a very undesirable article. It caused us to be very careful about accepting any financial support from the supply people, and it also probably influenced a number of supply people to give us no support or no advertising. We were not asking for support. We were inviting advertisements. I think more people would have availed themselves of that medium of advertising if it had not been for that article which appeared in the "Progressive Age" signed by "A Supply Man." Now, the work of printing the Report of the Revision Board after it was in the hands of the printer had to be stopped on the account of the serious lack of funds. I hope the Association will do nothing more than to express what they are willing to do and not bind the Association to anything, but refer this whole subject to the Executive Committee. Now, we will find ways of putting this Revision Report into print, but I do think that the Association is entitled to more support from the gas fraternity than they are receiving, and we also feel that if the members of the Association are too busy to assist or those who are already doing more or less work would become more active in their encouragement and support of the Association, we could at least carry on the work we have undertaken and I think we could increase it considerably. It was the intention last year to start a Research Department, but lack of funds prevented it. I hope it can be started this year. I think it is time for the members of this Association to get closer together than they have ever been, and have each member of the Association feel an individual responsibility in promoting the work of the Association and in securing from the balance of the gas fraternity a more hearty support for the work now being carried on by the Ohio Gas Light Association.

The President—It has seemed to me sometimes that in securing new members we put forward too much the benefit which the new member would derive from the Association, in place of the benefit which he would render to the Association by giving us his active support and co-operation. For instance, if we ask the representative of some company to become a member of the Association we say to him, "You will get such and such benefits from it." That is right, they will undoubtedly get those benefits. But on the other hand, I think everyone interested in the gas business is in duty bound to support the work which this Association is doing. They ought to do it because of its value to themselves. They may not directly get any benefit from it, they may not see dollars coming back into their pockets directly from it, but they will benefit from it by reason of the increased amount of information which will be rendered available by a more active membership.

Mr. McDonald (Ky.)—There is nothing I hate as much as to feel that I am a "deadhead" in any enterprise or to feel that I am not carrying my fair share of the load borne by the various wheel horses. I do not know exactly what is in Mr. Doherty's mind, when he speaks of a more united support in some of the department work which our Association is now engaged in carrying on. For my own part, if the report that Dr. Harrop has outlined was put into print, and I could not get the volume in any other way than by paying $25 for it, I would have the volume immediately. Any one subject discussed by the authorities he has named there, would be worth that much to any gas manager who was up against the problem discussed. If Mr. Doherty means that we must get a sufficient number of members or raise the dues in order to carry this work ahead, I think this Association can say to any man in the gas business, "Here is one piece of work which we propose to place in your hands without any further cost to you, and which will be worth any time you have to consult it, 10 times more than the annual dues for 1 year." I have made a trip of 1,000 miles simply to investigate one of the points which I find discussed in the Question Box, and in the report of the Board of Revision by recognized authorities on the subject. I expect all the rest of us have had the same experience. So that the point I want to emphasize is that I think this Association can go before its members and show not only what it has done, but what it proposes to do, and it can go before people who are not members and show them the same results in a way which will appeal to them in the way that I spoke of at first, of not wishing to profit entirely by others' labors who do contribute to it, but also to the more direct motive of self-interest that by contributing to it they are putting into their hands the means of saving themselves costly mistakes and availing themselves of very profitable information furnished by recognized authorities.

Dr. Harrop—If I may speak without seeming to talk on my own report, I would like to make a suggestion. I think that pretty nearly every gas man in the United States who has anything to do with Associations or with gas periodicals recognizes that the Ohio Association has been doing better work in the last few years than most of the Gas Associations in the country. Everyone everywhere admits that the Ohio Association is the most aggressive of all the Associations. They admire the work that the Ohio Association has done; and yet, don't you know there is a feeling about it that there may be something humorous in it, and a sort of tendency to patronize the Ohio Association. They know that the Ohio is doing good work, but still they do not respect it as it should be respected. The Ohio has not the dignity that some of the other Associations have. Gentlemen, I have given a great deal of thought to this subject, and the only reason I can find lies in the name of the Association. There are other State Associations in the country, as, for instance, the Wisconsin, the Michigan and other local Associatiods which do not go by State names. None of them, however, with the exception of the Ohio, has done work which has become of national importance. Most of them have few members outside their own State boundaries, but there is no State Association in the country that is constituted in the same peculiar way that the Ohio Association is constituted. All of you gentlemen have seen the list for the present year and have probably heard of the number of members admitted at this meeting. Do you realize that we are nearer to the size of the American Association than we are to the Western, and that the Western Association is below us? We now have about 750 members. Next year we are going to have over 1,000, perhaps 1,200. (Loud applause). Gentlemen, it appears to me the trouble lies in the name. We are not a State Association any more. More than 35 per cent. of the 750 members are

connected with concerns outside of the State of Ohio. More than 85 per cent. of the membership of the Ohio Association come from without the borders of the State of Ohio. To-day we are meeting outside of the State of Ohio. This is not an Ohio Association any more. Our membership represents more gas companies in the United States than any other Association in the country. (Renewed applause). Gentlemen, I think the time has come to change the name of the Association.

Mr. Doherty—In the preface of my Question Box I set forth something as to the history of the Ohio Gas Light Association. It is not so termed, but that is what it means. There was a time when the State of Ohio had 114 artificial gas companies. Can anybody tell me how many it has now? I do not know. I asked for information. I know that it has a comparatively small number. The organization was formed originally and given the name of the Ohio Gas Light Association, but it was never strictly a State Association. The membership was invited at its inception from other States as well as Ohio, and members of the gas fraternity from other States were prominent in its organization. Of the original membership in the Ohio Gas Light Association very few are any longer citizens of Ohio. The natural gas business proved a very effective competitor of the artificial gas companies of Ohio. Many of the original members of the Ohio Gas Light Association have left the State and by natural process the membership has now become national in character. It has been apparent to me for some time that a change of name would come up for consideration sooner or later. In fact, this same matter was considered at the meeting in Columbus in 1901. Since then, however, conditions have changed somewhat. We now have a committee charged with the responsibility of attempting to amalgamate the two leading Gas Associations, and I think that the record of the Ohio Association so far is that its interests are: First, for fraternal advancement; secondly, that it does not want to take any step except it be in the line of advancement for the entire fraternity. Now Dr. Harrop's suggestion of a change of name indicating an organization of national character is pertinent, but I think it ought to be given very careful consideration. We certainly do not want to do anything which will prevent securing progress for the industry as a whole. I would, therefore, recommend, Mr. Chairman, that Dr. Harrop's suggestion be placed in the hands of a committee who can canvass the situation, and the subject will then come up for discussion when that committee makes its recommendations at to-morrow morning's session. I, therefore, move, Mr. Chairman, that a committee of three be named by the President to canvass and report to-morrow morning on this subject.

Mr. Robb—It seems to me that what Dr. Harrop has said, to the effect that the work of the Ohio Association is not receiving the support it should receive, is not due to the name of the Association, but is partially due to the great discrepancy between the value of the benefits received by the various members and the ridiculously small amount of annual dues.

Mr. Butterworth—I second Mr. Doherty's motion.

Mr. Doherty's motion as seconded by Mr. Butterworth was then unanimously adopted.

The President appointed as such committee Messrs. Donald McDonald, Louisville, Ky., Irvin Butterworth, Grand Rapids, Mich., Eugene Printz, Zanesville, O.

Mr. Doherty—As I understand it we are really on a discussion of Dr. Harrop's Revision Report. Mr. McDonald in speaking about it said, with reference to the inability of the Association to publish the Report this year, that he did not want to be a "deadhead" feeling that his dues were smaller in the Association than the benefits he got from it. I want to call attention to the fact that the members of this Association are paying by way of annual dues as much as the output expenses of the Association amount to. By output expenses I mean those expenses which vary with an increased membership. I cannot give you the exact amount that our expenses would be increased by reason of an increased membership, but I could state that the National Electric Light Association, which has a revenue of nearly $20,000 a year and spends it, has now a membership no greater than this Association. Their expenses which would be increased by additional membership are about $2.48 per member per year. They do all of the work that the Ohio Gas Light Association does and more, too. So that the member who is paying $4 a year is paying more than the output expenses per member. A great deal of our work can as well be done for a larger number of people as for a smaller number. Take the Question Box, for instance. Last year we published 2,000 and sent them to every gas company in the country. The additional expense of furnishing that publication outside of our own membership was not considerable at all. I do not think it is funds we need as much as support. Moral support is what we need more than anything else. When we get such letters as Mr. Greenough wrote to the Editor of the Question Box, it is not the kind of moral support we need. There are a good many men who seem to think that aggressiveness on the part of a gas association is a crime. The main thing we want to do is to get the moral support of the entire gas fraternity. It will be no trouble to raise the necessary amount of money when we have that support.

Mr. McIlhenny—The suggestion was made to refer the whole subject a little while ago to the Executive Committee. I think that would be the proper course to take under the circumstances. It is a very broad subject and one which we have but little time to discuss now. We all want to act advisedly and do not wish to make any mistake. I think that the question of moral support is one about which we need have no concern. The Ohio Gas Light Association to-day is having the support of the great bulk of the gas men of the country. There is no question about that. They all admit it, and the mere fact that a few people do not entirely accord with it I think is of no significance. It is to be expected, and we cannot find fault with it too strenuously. By so doing we are apt simply to encourage bad feeling. The work is what is going to count and show for itself, and is now showing for itself. The fact that the membership has increased so largely this year I think is due to the latent effect of the work of the Ohio Gas Light Association in the past. The Question Box was sent around, as has been stated, to all of the gas companies of the country, whether they were members of this Association or not. That has had a most excellent effect. Gas men realize that to belong to this Association means that the benefits are far in excess of any annual dues to be collected. They appreciate that it is an aggressive Association, doing what it can for gas men in general. I believe the increase in membership is largely due to these facts. I believe next year, even without making any particularly aggressive effort, the membership will be fully as great if not greater than that predicted by Dr. Harrop. So that I feel there is no occasion for disappointment. On the contrary, we should be pleased with the result when we know that we are doing something all right. As "Davy" Crockett said, "Know that you are right, then go ahead;" but be sure you are right first. We know we are in that position, and I think we can rest perfectly contented with the outlook. I think the proper course would be to refer this whole subject to the Executive Committee. That Committee can examine it in all of its bearings, and I have no doubt whatever that the matter can be brought to a successful issue. I would, therefore, move, Mr. Chairman, that the matter of the publication of the report of the Bevision Board be referred to the Executive Committee (it is a most admirable report, and I believe that if it is sent around to all of the gas companies it will speak for itself and will do much to increase the membership of the Association) with power to act; that the thanks of the Association be extended to Dr. Harrop for his efficient work, and that he be requested to continue as Chairman of the Board of Revision. (Motion seconded.)

Mr. Doherty—I want to call attention to one thing. The Association can very readily cut its cloth in accordance with the funds at its disposal, but that means that the amount of work we can do will be very meager. Two years ago our annual revenues were something like $800 a year. It was impossible to increase those revenues until the Association showed some activity and increased activity called for more funds. By reason of this increase in activity and increased membership, the revenues went from $800 to $1,600 the following year. Now they have increased from $1,600 to approximately $3,000; but it is a case where the activity must all precede the revenue. Now, the Association has incurred no obligation at all in this work. A number of men interested in the Ohio Gas Light Association have said that if the Ohio Gas Light Association will go ahead and do whatever lies within its power to promote the industry earnestly and actively, what funds it cannot supply will be supplied from other sources.

And thereupon the motion above made and seconded was unanimously adopted.

On motion the Association adjourned until Friday, March 17, 1905, at 9:30 o'clock, A.M. (To be Continued)

Some Coal Statistics.

Electricity notes that in view of the enormous amount of coal annually consumed by electric lighting and power stations throughout the country, some statistics collected for the United States Geological Survey by Mr. Edward W. Parker and just made public, should prove interesting to our readers.

During 1904 the total production of coal amounted to 351,196,953 short tons, having a total value at the mines of $445,643,528. Compared with 1903 this shows a falling off of 6,159,463 short tons in quantity and of $58,080,853 in value. This decrease, although proportionately large in the figures of value, does not indicate any interruption to the generally prosperous conditions which have prevailed during the

last 8 years. It was simply a natural reaction from the normal activity which had been maintained throughout the coal mining regions in 1903, due to the exhaustion of all coal stocks on hand by the memorable strike of 1902. In order to renew the coal stocks and at the same time to provide fuel for immediate use, the coal mines in 1903 were pushed to their utmost capacity, or, one should probably say, to the capacity of the railroads to handle the output. As a result the enormous production of 357,356,416 short tons was recorded. Prices raised high by the famine of 1902 remained high for a large part of the year and the total value of coal at the mines, before any expense of transportation or selling costs had been added, amounted to $503,724,381, an increase of $136,600,000 over that of 1902.

The production of 1904, while less than that of 1903 by 6,159,463 short tons, exhibits a normal increase when compared with the annual production during the 10 preceding years. The average price for all coal mined and sold in 1904 was $1.27, as compared with $1.41 in 1903, and $1.22 in 1902.

One of the interesting features in connection with the anthracite trade is the constantly decreasing proportions of the large or more profitable sizes of coal sent to market, and the equally constant increase in the proportions of small or less profitable coal.

This in part may be attributed to the constantly growing demand for electric current. In 1890, 77 per cent. of the shipments from the anthracite regions consisted of sizes larger than pea coal coal and 23 per cent. represented the shipments of pea coal and smaller. In 1904 the large sizes made up only 62 per cent. of the total, while the small sizes had increased to 38 per cent.; or, putting it in another way, the total tonnage of large sizes from 1890 to 1904 has increased 25 per cent. (from 28,154,678 tons to 35,636,661 tons), while the tonnage of small sizes has increased 158 per cent. from 8,460,781 long tons in 1890 to 21,855,861 long tons in 1904.

The recovery of usable coal from the old culm banks by washing has furnished some of this increase in the shipments of small sizes and the installation of washeries at the breakers for saving the small sizes in the primary preparation of the coal has done more. The recovery from the old culm banks has averaged about 2,500,000 long tons annually during the last 4 years.

The statistics of bituminous coal production comprise all varieties except Pennsylvania anthracite, and include semi-anthracites, semi-bituminous, cannel, splint and block coals, and brown and black lignites. The small production of anthracite in Colorado and New Mexico is also included in the bituminous output. In 1904 the aggregate production of all these varieties amounted to 278,040,244 short tons, valued at $306,669,508, against 282,749,348 short tons worth $351,687,933 in 1903, indicating a decrease of 4,709,104 tons in amount and $45,018,425 in value. The average price a ton for all coal mined and sold, including colliery consumption, fell from $1.24 in 1903 to $1.10 in 1904.

The Central Electric Station Superintendent.

By Mr. G. Wilbur Hubley, in *Elec. World.*

The position of superintendent in the modern central station is one deserving most careful and scrutinous attention on the part of the owners of such properties. Large values are placed under the custody and care of the individual filling this position, and results of operation and maintenance of the installation are dependent on the competency of the man selected for the office, and, in consequence, the earning power of the plant is almost, if not entirely, dependent on the proper and able action of the superintendent. It should be appreciated, therefore, that the superintendent is the very heart of the commercially successful plant, and the selection of such a man is of most vital interest and weight to the owners.

The man filling such a position should possess the characteristics of honesty, concentration, perseverance and conscientiousness of purpose. Essentially, a good education is requisite, and it is of special value for such to be of a technical nature, rather than of a practical one, although a proper combination of both is to be desired. However, the most important item in the education of a superintendent is that of logical reasoning power, in order that all theories and conclusions shall be well balanced and their application to actual practice be made with regard to their commercial adaptability, as well as to their accuracy and precision as viewed from an engineering point of view.

An engineering education is certainly most desirable, if not absolutely essential to the qualifications of a superintendent of the central station, in order that he may be prepared to successfully meet all problems which will be presented from time to time.

The proper solution of important questions often calls for peculiar integrity of judgment. It is necessary that the decision be the result of a complete and thorough knowledge of all the circumstances and conditions of the detail factors of each individual problem presented, and that such conclusions be given only after most careful and earnest investigation and research.

Only after years of experience, during which time the mind has developed to the point of meeting all exigencies that might arise in central station management, is the superintendent equal to all emergencies and fitted for the larger and increased responsibilities which may devolve upon him by undertakings of more stupendous character.

Experience is said to be a severe teacher, and no doubt this is true where it is the result of ignorance or lack of proper judgment, but the experience, which emanates from the march of civilization and the improved devices and methods developed from year to year, is a factor of education of more value than all others to the man who is capable of grasping the knowledge so offered. The salvage of the knowledge to be had from the past experience and methods used in former work of others, as well as that of one's self, is invaluable as assistance in the consideration of new projects or in the adoption of best methods and system to be employed in the direction of work under charge.

The superintendent should be a good statistician, even to the extent of this characteristic being a "pet hobby." The value of keeping records and data of all details of work and station routine, especially as relating to costs, cannot be over-estimated. It is necessary that a complete and thorough system for arranging such data be devised, in order that the various details of subjects can be properly classified and indexed and at all times be conveniently and readily available for reference. Like wine of early vintage, their value increases with age, for it requires some time before any correct deductions can be taken from compiled data. With complete detail data, it is possible to adopt certain standards in particular lines of work, and the incentive to improve and raise these standards is one that inspires ambition in the superintendent and his assistants.

The superintendent who is a close student of human nature and is capable of discerning the qualifications and characteristics of other men will find this talent of greatest value in his judgment of selection of employees and the assignation of the man of proper caliber to the class of work to which he is best fitted, and when opportunity for advancement or promotion of old employees is presented, the task of selection of men best adapted for the new opening will be facilitated.

While prompt and decisive action of superintendent is desired, yet it is necessary in order to achieve highest success to have qualities of deliberation and conservatism, and in case of undertakings where great responsibilities are involved he must, in justice to himself, as well as others, approach the same with caution and carefully weigh and consider all conditions that may tend toward success or failure of the project. However, when conclusions have been so derived, he must have the courage of his convictions and act accordingly, without deviation.

Under present strenuous demands and conditions surrounding the modern central station, it behooves the superintendent to be progressive and up-to-date in his ideas and methods. In fact, there is no zenith where the successful superintendent may rest and feel satisfied with his past records, even though such records be only of complete success.

The superintendent will find it most valuable to associate himself in the membership of the leading engineering societies in the country, and, as far as it is practicable to do so, to give his support and take active interest in their affairs by contribution of original papers, or taking part in discussions. The records of such societies act as a reservoir for the storage of knowledge, and the privileges of membership are most valuable to the successful man of this profession. Not less in importance is the necessity of reading the leading engineering and technical publications, and in this regard it is necessary to use careful discernment in selecting the periodicals which are to be adopted for regular and systematic reading. Most valuable suggestions are to be obtained from the articles descriptive of new installations, and by such information one can keep informed of the progress and development of other plants. It is, of course, necessary that the superintendent follow the review of standard books on special subjects relating to his work, and, in general, to keep pace with the times by the reading of all new work, or proposed plans of systems for the central station.

The personal equation of the central station superintendents gives evidence that it is an all-important factor. Frequently it may be

observed by investigation that one electrical system will prove to be commercially successful, while another system with similar equipment and conditions will be shown to be a failure. Results at such variance can often be proved to be due almost directly to the superintendence factor. The attainment which is often held up as the pinnacle of success to which the superintendent should strive is the condition of "keeping running." It is true that primarily this condition is essential to all other results, but it should be considered as being only the base line from which all attainments of success should start, and the principal consideration naturally is reduced to the question of economy of station maintenance and operation. To secure best results in station economies the superintendent must become familiar with the minutest details by regular and close attention to the operation and methods employed in the various departments.

The superintendent in charge of plants must be a good disciplinarian, as it is essential to the good of service that system and regulation among the employees should prevail. His orders and directions to employees must be brief, concise and definite and admit of no misinterpretation or misunderstanding.

In general, the superintendent of the central station must possess such peculiar knowledge and experience accompanied with executive ability as to be able to have complete and systematic control of the operation of the property under his charge, and he should strive to maintain the highest standard in all departments.

SPECIAL ENGLISH CORRESPONDENCE.

COMMUNICATED BY NORTON H. HUMPHRYS.

SALISBURY, ENGLAND, May 10th, 1905.

A Popular Sensation in Gas Testing.—A New Process at Truro.—Who Invented Gas?—Gas Beats Electricity in London.

The testing of coal gas is not in any sense a popular subject. The average gas consumer knows little about it and cares less. To him the official examiner, with his costly and cumbersome paraphernalia, is a superfluity. If he gets a satisfactory light, and the bills are reasonable, he says that the gas is good, and if there is failure in either of these respects, not all the examiners in the world will persuade him that the illuminating power is up to the standard. A notable feature is the tacit recognition of the fidelity of official tests by the Parliamentary Department Committee, to which I referred last month. They said in effect that it did not matter whether gas of a certain quality was called 13 or 14 candle. And so much being granted, it is not very difficult to carry the argument to the extent of showing that it does not matter whether the gas is tested at all. In view of these facts one has to cast about for the attractive features of a prosecution at Wexford, Ireland, when the gas company were summoned before the Petty Sessions for having, on the 13th March last, supplied gas of 12.1 candles, instead of the 14 candles demanded by the Act. The examiner had only taken two tests, and these were sandwiched between tests taken by the assistant engineer to the gas company which showed a result of 14.1 candles. But this is a matter affecting photometrical experts alone, and does not account for the case drawing a crowded audience, including prominent townsmen, or for a manifestation of unusual public interest in the proceedings. The defence to the case included a strong personal element as directed against the corporation gas examiner, and one could scarcely wish his worst enemy a harder fate than to get under the thumb of a prominent Irish Council. No doubt there were reasons for this course, but it evidently did not influence the magistrates in favor of the company, as the offence was considered to be proved, and a fine of £5 was inflicted. The gas at Wexford is cheap, and the public are well served, as evidenced by the fact that they need the service of a gentleman from Dublin to tell them that the gas is bad. This fact, taken with the evidence of the assistant engineer, seems to show that the company have done nothing to warrant the indignity of being fined at a police court in company with Monday drunks and other disreputables, a proceeding which practically brands them with the odium of the prisoners' dock. And it is fortunate that the public interest attaching to the case was sufficient to attract an influential audience to hear the full statement of the facts.

A gathering described as the largest and most representative in connection with the gas industry that has ever been seen in Cornwall, assembled at Truro a few days ago to combine business with pleasure. The business consisted of inspecting and starting a new methane-hydrogen gas plant, and the pleasure of a luncheon and steamboat trip up the river Fal. And an event that may approximately be described as including both business and pleasure was the attendance at a lecture on "Coal Gas; How to Make It and How to Burn It," delivered by Prof. Vivian B. Lewes. In addition to the gentlemen interested in the design and construction of the new plant, the directors of the Truro Gas Company, and other local celebrities, there was a good attendance of directors and engineers from neighboring towns, and the President of the Institution of Gas Engineers managed to rush away from the preparation of his inaugural address and other matters in connection with the forthcoming meeting in London that may be supposed to be pressing upon him at the present time, in order to give the inaugural ceremony his blessing.

A notable feature in the after luncheon speeches was the remarks of Major Mead, the chairman of the Falmouth Gas Company, who brings forward a new claimant for the honor of inventing gas. If this gentleman is correct, it is necessary in the cause of truth, to rewrite the first few paragraphs in every historical notice of our industry that has yet appeared. And his statements also afford a refreshing change in the usual method of dealing with a description of the inception of a great invention. One certainly finds it a little hackneyed to read that the inventor labored in poverty for 20 hours a day for about the same number of years, and sold the coat from off his back and the quilt from off his bed in order to procure the material and apparatus necessary for his researches. And the little sermon in Sandford and Merton style on the advantages of frugality and perseverance and how these virtues always bring their own reward, does get wearisome, like everything else that is good for us. Major Mead's hero followed a more agreeable if less reputable course. He did not toil for quarter of a century, and if he sold his garments it was a means of meeting excessive tavern bills. To quote the Major's own words, "With regard to the invention of gas its discoverer was not William Murdoch, but a man named Hornblower, a drunken fellow who lived at Ponsanooth in Cornwall, and was a millwright. He (the speaker) once knew a man who with Murdoch served his time with Hornblower. After his drinking bouts, Hornblower always came back with an idea, and one day he started the manufacture of gas, and lit up a shop a mile out of Penryn with that agent. Murdoch afterwards made gas at Redruth, but the discovery was not his." These statements are not only disconcerting to subscribers to Murdoch memorialists, but also to advocates of temperance and industry. One has been able to point out to unsteady workmen, without fear of contradiction, that drunkeness, poverty and crime go hand in hand, and that the rewards of genius go to the sober and industrious class. But now the man who turns up sometime on Wednesday to commence his week's work, with unsteady hands and an empty pocket, may need a well deserved reproof by a reference to Hornblower and say that he has only been seeking an idea.

The patentee of the methane-hydrogen process is Mr. C. R. Tully, who derived his inspiration from a suggestion thrown out by Prof. Lewes in the course of one of his lectures. The process is essentially a modification of the water gas cupola process. It comprises a single column, that erected at Truro being 20 feet high by 6 feet in diameter, and the principal features are that the blow off is at the middle and not at the top of the cupola, and that tar or benzol is injected with the steam at the bottom. The effect of this arrangement is that only the lower half of the column of fuel is raised to incandescence, and that the resulting gases pass through a column of cold fuel, which takes up part of their heat and also filters out any sort of lampblack, retaining the same and passing it down to be converted into calcium oxide in the course of the next run. For further details I may refer to the excellent and liberally illustrated description of the process that appears in the *Journal of Gas Lighting*. The result of introducing hydrocarbon with the steam is that in place of the usual mixture of H + CO there is obtained a composition containing nearly 60 per cent. of H, 20 of CO, 10 of methane, 1.3 of hydrocarbons and only about 10 per cent. of nitrogen and impurities, having a heating value of 350 to 400 B.T.U., which may be mixed with ordinary coal gas at the foul main to the extent of 20 per cent. without prejudice to the illuminating power. If 30 per cent. is used, ½ gallon 90 per cent. benzol must be used for carburetting, to maintain the candle power, and a 50 per cent. mixture requires ½ gallon of the enricher per 1,000 cubic feet. The actual cost of the gas has been somewhat enhanced by intermittent working, and it would appear that a rather larger plant is required to bring out the best financial results. One point that the inventor is silent about, but which will require to be faced, is how far the consumer will stand a reduction of B.T.U. without kicking. If used to 16-candle gas, and it was proposed to reduce it to 14, with no corresponding benefit, the consumers would object. We have heard a great deal lately about the importance of cultivating the heating consumer. This can scarcely be assisted by substituting for the

650 B.T.U. article he has hitherto received a mixture that, according to the best of the above figures, will not pan out to 600 B.T.U.

The remarks made on the cost of electricity as compared with gas in last month's letter are supported by the statements made at a meeting of the Court of Common Council for the city of London last week, when the Streets Committee presented a report recommending the substitution of 112 gas lights for 47 electric arcs in several important thoroughfares, which would result in a saving at present prices of £363 per annum. The Chairman of the Committee, in moving the adoption of the report, said they had lighted nearly all the side streets with gas to the satisfaction of the public, and also all the bridges. He was convinced that electricity was a complete failure as a street illuminant. Paris, Berlin and Venice had adopted gas for street lighting, and the experience of his Committee was that the incandescent gas under pressure was a great improvement on electricity. Mr. Williams said he had been using 100,000 units of electricity a year and getting it at the lowest possible price, but had decided, although it would mean a big expense, to go back to gas which was 50 per cent. cheaper, and, apart from that, decidedly the better light. Mr. Cooper referred to some of the electric lighting as a disgrace, and said that when electricity was at its best it was not equal to gas. The report was adopted by a large majority. According to the report of the Engineer, 907 additional incandescent gas lamps have been put up during the past year; also several high pressure lamps, including three 2,000 and one 3,000-candle. Several improved forms of lantern were also under trial.

ITEMS OF INTEREST FROM VARIOUS LOCALITIES.

MR. E. C. WHITE, for some time superintendent of manufacture and distribution for the Consolidated Gas Company, of New Jersey, under the direction of Manager W. B. Tuttle, with headquarters at Long Branch, N. J., has resigned in order to accept the position of superintendent of the gas division of the light and traction properties at San Antonio, Tex., that form part of the possessions of the McMillin syndicate. Mr. White has been connected with the Consolidated Company since 1898. The very best of good luck to him.

MR. AND MRS. ISAAC C. BAXTER and their infant son sailed for Europe the 20th inst. They will remain abroad 3 months or more.

AT the annual meeting of the Newark (N. Y.) Gas Light and Fuel Company the officers elected were: Directors, Messrs. William T. Morris, Percy Lang, F. E. Lyford, F. W. Wenban and P. R. Sleight; President and Manager, William T. Morris; Vice-President, Peter R. Sleight; Secretary and Treasurer, Percy Lang.

MR. JAMES WORK, formerly prominent on the Board of Trustees of the Philadelphia Gas Works, when that plant was directly managed by the municipal authorities, died at his home in Roxborough, the afternoon of the 16th inst. He was in his 75th year.

ACTUAL construction work on the new plant that is to be operated in Rochester, N. H., by the Rochester Gas Light Company, is underway. The plant is to be of the coal gas type.

MR. IRA B. SMITH has been elected to succeed Mr. F. G. Bigelow on the Board of Directors of the Milwaukee Gas Light Company.

AT the semi annual meeting of the Ocean Grove (N. J.) Association, which was held in "the Grove" the 18th inst., Vice-President Ballard was asked what were the prospects for a gas supply in "the Grove" this season. His reply was: "The gas question has burned itself out." This is taken to mean that negotiations looking to a gas service there are at an end.

AT the annual meeting of the South Jersey Gas, Electric and Traction Company, which was held in the Camden (N. J.) offices of the Public Service Corporation on the 17th inst., the officers elected were: Directors, A. R. Kuser, John E. Kuser, David Baird, Frank O. Briggs, Thos. McCarter, Uzal McCarter, William J. Thompson, Robert F. Woodward, F. F. Dryden, Jno. J. Burleigh, Thomas C. Barr, E. J. Moore, J. W. Morgan and W. J. Bradley; President, A. R Kuser; Vice-President, William J. Bradley; Secretary, Fred Evans; Treasurer, Charles G. Cook.

THE Hoosick Falls (N. Y.) Illuminating Company has been incorporated by Messrs. Roger Lewis, L. C. Jetard, Sherman Cox, R. W. Gifford and George D. Martin. Its avowed purpose is "the manufacture and supply of gas for lighting in the village of Hoosick Falls, town of Hoosick and vicinity." It is capitalized in $150,000, of which $50,000 is preferred.

MR. A. H. CAMPBELL, JR., has been elected to the vacancy in the Board of Directors of the Consumers Gas Company of Toronto, Canada, occasioned by the death of Mr. George Gooderham.

MR. C. L. GEROULD has charge of the planning of the gas plant that is to be constructed at Oelwein, Ia.

THE offices of the Niagara Falls (N. Y.) Gas and Electric Light Company are now located in handsome, spacious quarters in the Wood-Harmon Block.

MR. GEORGE G. RAMSDELL, Secretary of the American Gas Light Association, sailed for Europe last Thursday per steamer "Deutschland." He will be home again before August 1st, and we hope that on his return he will be as spry as when he left.

AT the meeting of the shareholders in the Citizens Gas Company, Stroudsburg, Pa., held the 17th inst., the following officers were elected: Directors, A. A. Holbrook, John B. Reynolds, Newton S. Kistler, W. A. Gilbert, A. M. Palmer, E. B. Troxell and John B. Price; President, John B. Reynolds; Vice-President, Newton S. Kistler; Secretary-Treasurer, A. A. Holbrook; Attorney, A. M. Palmer.

A CORRESPONDENT in Cincinnati, O., writing under date of the 19th inst., says: "I thought it might interest you to know that the Directors of the Cincinnati Gas and Electric Company have awarded the following contracts in connection with the reconstruction of their West End station: Bench work, to the Parker-Russell Mining and Manufacturing Company, of St. Louis; charging and discharging machinery, to Mr. G. A. Bronder, of New York; structural steel (retort house), to American Steel Company; on coal storage account, to Messrs. Brown, Ketchum & Co.; carpenter and roofing work to Mr. L. P. Hazard.

THE executive management of the Bethlehem (Pa.) Consolidated Gas Company, as constituted at its last annual meeting, is as follows: President, Liddon Flick; Vice-President, Morris Williams; Secretary and Treasurer, R. J. Flick.

MR. ALEXANDER WYNESS, Secretary of the Genesseo (N. Y.) Gas Light Company, informs us that the annual meeting of the Company will be held in Genesseo, at the office of the Treasurer, Mr. G. B. Adams, 4 P.M. of Tuesday, June 13th.

MR. PETER J. KREBS, City Clerk, Newport, Ky., informs us that notice has been given that the General Council of Newport will receive sealed bids for the *exclusive franchise* of entering in and upon the "streets and public ways of said city to lay, acquire, maintain and operate gas mains and pipes, with necessary service pipes and other appendages, in, through and under the streets, alleys and public ways of said city," for the purpose of supplying the residents with artificial gas, for the period of 20 years from the date of the acceptance of the successful bid. It is stipulated that bids shall be sealed and marked on the outside with the words "Bids for Gas Franchise," and that the same shall be delivered to the Board of Aldermen in regular, open session at the regular meeting to be held June 8th, 1905, or at the next regular session, if no session is held that day. Copies of the ordinance, prescribing terms, conditions, etc., of the proposed franchise, containing all information concerning the same and the bidding therefor, are on file in the office of the City Clerk, City Building, Newport, Ky., and the same may be seen on application to him.

THE Ramsdell Inverted Gas Lamp Company, of the village of Hempstead, L. I., has been incorporated by the Secretary of State, to manufacture and deal in certain specified types of gas and electric lamps, etc. It is capitalized in $250,000 and the named Directors are: Messrs. Geo. G. Ramsdell, George J. Crockett, Samuel M. Haines, D. T. Ackerley and William H. Morgan.

MR. OTTO T. BANNARD, President of the New York Trust Company, has notified the holders the "Certificates of Beneficial Interest" in the

tock of the New Orleans Gas Light Company, deposited with the Trust Company as Trustee, under the terms of the agreement of lease of the New Orleans Gas Light Company, that the New Orleans Lighting Company, Lessee, in and as provided by said lease, has deposited an amount of money equal to $125 per share for each share of stock represented by said Certificates of Beneficial Interest outstanding. Accordingly, all of said certificates are called in for payment, at the office of the Trust Company, 26 Broad street, New York, the 15th prox., payment therefor to be made at the rate of $125 per share.

MR. WM. HUMPHREYS, a veteran in the ranks, and Superintendent for many years in the old Union Gas Works, of Waterford and Lansingburgh, N. Y., died at his home in Waterford about a fortnight ago. He had been on the retired list since 1891, and was in his 80th year. He was the inventor of the Humphreys' gate-valve, and was admitted to membership in the American Gas Light Association at its 1875 meeting.

SUPERINTENDENT FULLAM, of the Clinton (Mass.) Gas and Electric Light Company, will have about all he can attend to this summer in keeping track of the betterments that are to be made on the generating and distributing divisions of the gas end of the Company's enterprise.

MR. HENRY LIKER has resigned the position of Manager of the Granville (N. Y.) Gas Company.

THE Lindenwald Light, Heat and Power Company, to supply gas and electricity to the residents of Chatham, Columbia county, N. Y., has been incorporated by Messrs. A. B. Gardenier, S. W. Smith and P. H. Smith, all residents of Chatham.

A CORRESPONDENT in Spokane, Wash., forwards the following under date of the 18th inst.: "Mr. Charles R. Collins, formerly head of the Citizens Light and Power Company, of Seattle, recently purchased the property and holdings of the San Diego Gas and Electric Light Company, of San Diego, Cal., and reorganized the corporation as the San Diego Consolidated Gas and Electric Company. He has since transferred it to a group of California capitalists, many of whom are residents of San Diego and Los Angeles."

GENERAL MANAGER BROODER, of the Lead-Deadwood (So. Dak.) Gas Light and Fuel Company, has arranged for the placing of 4 miles of main pipes this season. The Company's business continues to enlarge in most satisfactory manner.

THE following editorial is so unlike most writings in the daily prints respecting the subject in hand that we herewith reprint it—it is taken from the Brooklyn (N. Y.) *Daily Eagle*, date of the 17th inst: "There is now no doubt the bill reducing to 75 cents per 1,000 feet the price of gas furnished to the city will become a law. It has been shown that the cost of making gas in Brooklyn exceeds the figure to which the price is to be reduced. In other words, the gas which will hereafter be furnished to the city by the Company doing business in Brooklyn will be supplied at a loss. That compulsion is to be dignified by the name of law. Doubts were dispelled yesterday when the bill was signed by the Mayor, who granted a hearing. Of course, it was within the power of his honor to kill the bill. Hearings are presumed to be of service. They are granted so that the exercise of the power to vitalize or to veto shall be intelligently exercised. They are granted as a precaution against possible injustice. Another presumption is that solicitude for the welfare of the people will dictate vitalization or veto, as the case may be. There will be no veto at Albany. The Governor will follow suit. He has no alternative. He is as unalterably committed to the bill as any of the legislators who voted for its passage. Part of the Republican programme at Albany was political. Part of it was based on the assumption that Tammany and the gas companies are on excellent terms with each other, that the companies would have power enough to force a veto and that the chances of Republican success next November would be enhanced thereby. Well, Tammany is not taking any such chances. It is consulting its principal preference. It has taken the wind out of the sails of the candidate 'up the sleeve' of Mr. Hearst. This candidate will stand upon a platform clamoring for the public ownership of municipal utilities, including gas. A little while ago there was talk of the establishment of a gas plant by the city. It has subsided. Nor is it likely to be renewed, seeing that the city is to be served at a price lower than the cost of production. In the closing hours of the session, the crusade degenerated into a skirmish for political position. As a candidate, openly avowed and assured of renomination, the Mayor made no mistake when he signed the bill. Nor is there any mistake about the interests he consulted—they were those of a candidate pure and simple. He cast an anchor to the windward and it will hold. The complications of those who run against him will correspond. He has taken the popular side and will benefit accordingly. It cannot be alleged against him that he has made common cause with corporations, otherwise called monopolists.

"There are other views to take of the gas case. As already stated, it has been shown that the cost of production in Brooklyn is greater than the figure to which the price is to be reduced. The soverign power of the State has been invoked for what? To compel oppression. Ruin for the Company will not be the consequence because it does not transact business with the city on a large scale, but that is neither here nor there. It is one thing to insist that a community be protected from extortion. It is another to ordain that it shall not pay for all that it receives.

"Under the provisions of the bill the city will get something for nothing. It will get that something at the expense of the producer. To that extent, by the exercise of arbitrary power, or the arbitrary exercise of power, it takes that which belongs to others. For this sort of thing footpads have been taken into custody. Robbery is a strong term to use, but what other term is sufficiently descriptive? The fact that the victim happens to be a corporation affects the case in not the least degree. The Mayor says that as a legislative committee investigated the matter and decided 75 cents to be a fair price, it was his plain duty to assert the right of the city as against the contentions of the companies. Well, fairness does not happen to be a matter contingent upon the judgment of a legislative committee. In this case the question is one of fact. The accuracy of the figures presented by the Brooklyn Company is not impeached. The Mayor has substituted the committee's judgment for his own. An allusion to the inviolability of private property figures in the Mayor's memorandum. He intimates that failure to sustain it would weaken the cause of civilization, that New York could not afford to countenance any such injustice. He is right as to that. He is wrong to the extent that he does not know—as a matter of positive knowledge—that such injustice will not be perpetrated by the operation of the law. In the absence of a positive assurance, the bill should have been sent back to Albany as dead as dishwater. Not much more fortunate is the Mayor in what he has to say concerning the provisions as to pressure. Compliance with the provisions is impossible. That which the bill purports to compel cannot be done. This the Mayor dismisses as a technical matter, which may safely be left to adjudication of the courts. Canute commanded the tide to respect the royal feet, but it kept right on. The State commands the companies to fly in the face of the immutable. The Mayor calmly refers the matter to the courts and—signs the order. Not all comedians are on the stage. In the whirligig of events, political and official, candidates are forced to be affirmative or negative when they would infinitely prefer neither horn of the dilemma. That explains. It tells the whole story, leaving nothing unsaid. The Mayor has escaped abuse. He has avoided and assumed responsibility at one and the same time. He has become part and parcel of that which is iniquitous in one respect as it is grotesque in another—responsibility is there. He avoids responsibility for killing what should never have been born. Self-preservation is the first law of nature."

The Buffalo Foundrymen's Association.

The regular monthly meeting of the Buffalo Foundrymen's Association was held in its headquarters, 23 Builders' Exchange, May 16. President Lyman P. Hubbell presided and 28 members and several visitors attended. After the regular order of business was disposed of the Chair introduced Daniel Upton, supervisor of manual training in the Buffalo public schools, who in a very interesting talk explained the advantages of manual training offered at the Mechanic Arts High School to the young men of the city. This school has an excellently equipped pattern shop, 18 wood turning lathes, a cabinet shop with 24 work benches, a shop equipped with 20 forges and several drafting rooms. One of the basement rooms has been fitted out as a molding room, where the boys take lessons in molding before they enter the pattern making classes. The machinery is driven by electric motors. The branches of industrial training are as follows, First year, cabinet work and wood turning; second year, molding and pattern making; third year, iron forging, brazing, tempering, etc.; fourth year, machine shop practice. In each year the drafting conforms to the other work, the course as laid out consisting of free hand and mechanical branches. The latter takes in machine and allied subjects in the last two years. The aim is not to produce specialists in any line, but to develop the whole man by educating the hand and mind to work together. The boy is therefore better fitted to enter a larger field of usefulness. At present about 150 boys are taking the technical course, though it has been established only about two years ago.

THE AMERICAN GAS LIGHT JOURNAL

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NOTIFICATION RESPECTING ADVERTISING.
Orders for new advertising, or for changes in standing advertisements, to insure attention in the issue following their reception, must be in hand any time of Wednesday.

AGENTS:
New York—American News Co., 39 and 41 Chambers St.
Germany—Lemcke & Buechner, of New York.
England—Aug. Siegle, 30 Lime Street, London.

MONDAY, MAY 29, 1905.

The Market for Gas Securities.

There was a semblance of improvement in gas share prices during the week, but there was nothing very substantial in the net result. Consolidated gas closed to-day (Friday) at 185 to 187, ex. div. of 2 per cent. The local situation remains unchanged. It is a certainty that the Governor will sign all the bills relating to gas and electricity supply that were passed by the Legislature, and the thing of moment just now is as to the men who will compose the State Lighting Commission. The salary looks ample to attract the services of those who will give to the weighty subjects committed to their care, consideration of the sort that may not be founded on prejudice or carried out in ignorance. However, time will tell, and our belief is that when Albany and "the party" have leisure to look over their acts, they will perhaps not so say, but will certainly think, "We might have done wiser work."

Brooklyn Union is quoted at 183 to 192. Much will be done by way of betterment to its plant this season. Baltimore Consolidated is pegged at 83½ bid, but no stock seems forthcoming at that figure. Peoples, of Chicago, is again above par mark. The Boston situation is settled, let us hope for good. The general gas share market is steady.

Gas Stocks.

Quotations by George W. Close, Broker and Dealer in Gas Stocks.

16 WALL STREET, NEW YORK CITY.

MAY 29.

☞All communications will receive particular attention.

☞The following quotations are based on the par value of $100 per share.

N. Y. City Companies.	*Capital.*	*Par.*	*Bid.*	*Asked.*
Consolidated	$73,177,000	100	185	188x
Central Union, Bonds, 5's	4,000,000	1,000	108½	110
Equitable Bonds, 6's	1,000,000	1,000	..	102
" 1st Con. 5's	2,300,000	1,000	118	120
Mutual	3,500,000	100	300	320
Municipal Bonds	750,000	..	..	..
New Amsterdam Gas Co..				
Bonds, 5's	11,000,000	1,000	112	113¼
New York & Richmond Gas Co. (Staten Island)	1,500,000	100	35	.
1st Mtg. Gold Bds. 5 p. ct.	1,000,000	..	.	.
Northern Union, Bonds, 5's.	1,250,000	1,000	104	106
New York and East River..				
Bonds 1st 5's	3,500,000	1,000	112	114
" 1st Con. 5's	1,500,000	..	106½	108½
Standard	5,000,000	100	125	130
Preferred	5,000,000	100	145	155
Bonds, 1st Mortgage, 5's	1,500,000	1,000	116	117
Yonkers	299,650	500	130	..
Out-of-Town Companies.				
Brooklyn Union	15,000,000	100	183	192
" " Bonds (5's)	15 000,000	1,000	113	115
Bay State	50,000,000	50	¼	⅜
" ncome Bonds	2,000,000	1,000	..	75
Binghamton Gas Works	450,000	100	..	65
" 1st Mtg. 5's	509,000	1,000	93	96
Boston United Gas Co.—				
1st Series S. F. Trust	7,000,000	1,000	82	85
2d " " "	3,000,000	1,000	47½	50
Buffalo City Gas Co.	5,500,000	100	6	7
" " Bonds, 5's	5,250,000	1,000	66	68½
Capital, Sacramento	500,000	50	..	35
Bonds (6's)	150,000	1,000	..	..
Chicago Gas Co. Guaranteed Gold Bonds	7,650,000	1,000	104	104¼
Cincinnati Gas and Electric Co	29,500,000	100	177¼	177½
Columbus (O.) Gas Co., 1st Mortgage Bonds	1,500,000	1,000	97½	99
Columbus (O.) Gas Lt. & Heating Co	1,682,750	100	88¼	89¼
Preferred	3,026,500	100	107½	109
Consumers, Toronto	,000,000	50	200	204
Consolidated, Baltimore	11,000,000	100	83½	..
Mortgage, 6's	3,600,000	..	..	118
Chesapeake, 1st 6's	1,000,000	..	..	..
Equitable, 1st 6's	910,000	..	..	..
Consolidated, 1st 5's	1,490 000	..	..	112
Consolidated Gas Co. of N.J.	1,000,000	100	15	17
" Con. Mtg. 5's	880,000	1,000	89½	92
Bonds	75,000	..	..	100
Detroit City Gas Co	4,835,500	50	..	50
" Prior Lien 5's	5,603,000	1,000	..	98
Detroit Gas Co., 5's	361,000	1,000	75	80
" Inc. 5's	16,000	100	98½	100
Equitable Gas & Fuel Co., Chicago, Bonds	2,000,000	1,000	..	101
Essex and Hudson Gas Co.	6,500,000	..	39	40
Fort Wayne	2,000,000	..	..	..
" Bonds	2,000,000	..	55	..
Grand Rapids Gas Lt. Co. 1st Mtg. 5's	1,235,000	1,000	104½	105
Hartford	750,000	25	190	200
Hudson County Gas Co., of New Jersey	10,500,000	..	104½	105½
" Bonds, 5's	10,500,000	..	107	108
Indianapolis	2,000,000	..	70	75
" Bonds, 6's	2,650,000	..	106½	108
Jackson Gas Co	250,000	50	82	..
" 1st Mtg. 5's	290,000	1,000	101	102½
Kansas City Gas Light Co., of Missouri	5,000,000	100	..	36
Bonds, 1st 5's	3,832,000	1,000	102	104
Laclede, St. Louis	10,000,000	100	..	.
Preferred	2,500,000	100	95	105
Bonds	10,000,000	1,000	108½	109
Lafayette Gas Co., Ind.	1,000,000	100	..	60
Bonds	1,000,000	1,000	60	65
Louisville	2,570,000	50	143	145
Madison Gas & Elec. Co.				
" 1st Mtg. 6's	350,000	1,000	107½	108½
" 6 per cent. scrip, due 1910	100,000	25	85	87
Montreal, Canada	2,000,000	100	218	218¾
Nashville Gas Lt. Co.	1,000,000	100	110	..
Newark, N. J., Con. Gas Co.	6,000,000	..	56	58
Bonds, 6's	4,600,000	..	105	105½
New Haven	2,000,000	25	200	..
Peoples G. L. & Coke Co., of Chicago	25,000,000	100	100¼	100½
Peoples Gas Lt. & Coke Co., Chicago, 1st Mortgage	20,100,000	1,000	..	..
2d "	2,500,000	1,000	104	
Rochester Gas & Elec. Co..	2,150,000	50	88	..
Preferred	2,150,000	50	118	..
Consolidated 5's	2,000,000	..	87½	90
San Francisco, Cal.	15,800,000	100	58½	58¾
St. Joseph Gas Co.				
" 1st Mtg. 5's	751,000	1,000	94	96
St. Paul Gas Light Co	1,500,000	100	45	47
1st Mortgage 6's	650,000	1,000	113	116
Extension, 6's	600,000	1,000	112½	115
General Mortgage, 5's	2,465,000	1,000	92	93
Syracuse, N. Y.	1,975,000	100	50	55
Bonds	2,047.000	1,000	102	.
Washington, D. C	2,600,000	20	307½	310
First mortgage 6's	600,000	..	..	..
Western, Milwaukee	4,000,000	..	..	..
Wilmington, Del	600,000	50	290	..

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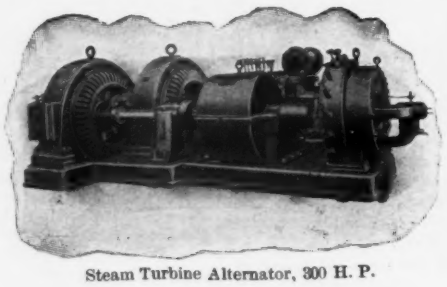

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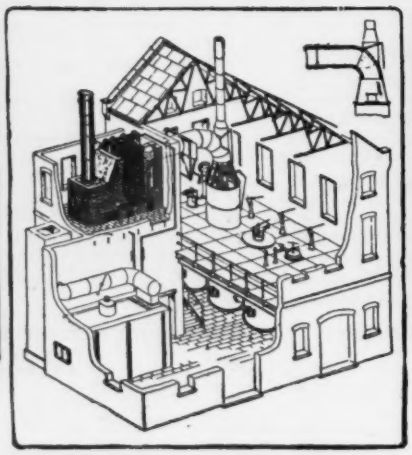

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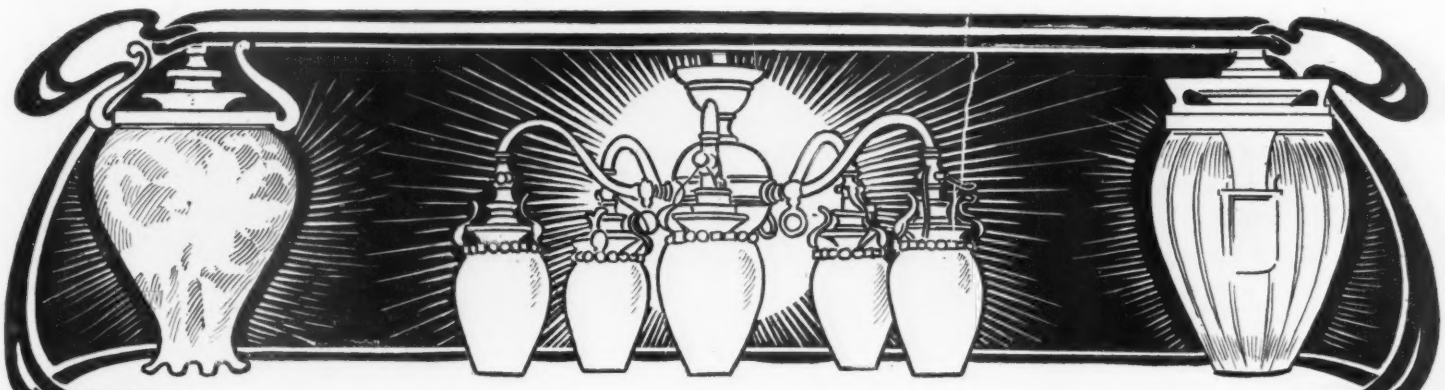

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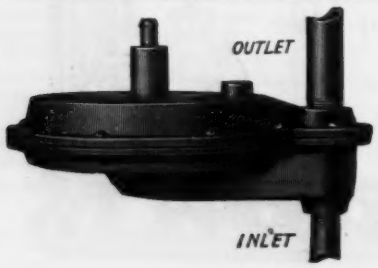

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REPRESENTATIVE
COAL & WATER GAS
APPARATUS.
PURIFIERS, VALVES.
CONNECTIONS.
ROTARY SCRUBBERS.
WASHERS.
BY PRODUCT MACHINERY.
COMPLETE GAS PLANTS.

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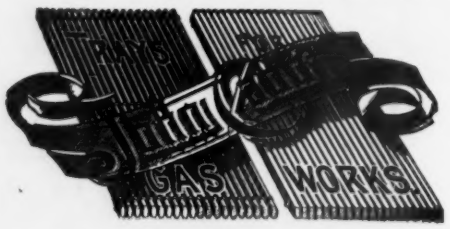
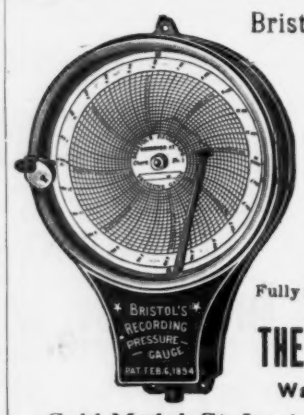
Church's Patent Trays.
Reversible; Strongest; Most Easily Repaired.
Special Trays for Iron Sponge.


1412-1416 Adams Street, Hoboken, N. J.
We also Supply the Chapest and Strongest
•Reversible Bolted Trays•
IN THE MARKET.
SEND FOR BOOKLET AND CIRCULARS.



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PRESSURE GAUGE.
For continuous records of Street Gas Pressure.
Simple in construction, accurate in operation and low in price.
Fully Guaranteed. Send for Circulars.
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Waterbury, Conn.
Gold Medal, St. Louis Exposition.

FINANCES OF
Gas and Electricity Manufacturing Enterprises,
By WM. D. MARKS. Price, $1. For Sale by
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Gas Engineer's Pocket-book, —BY— HENRY O'CONNOR,
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FOR ASSESSMENT PURPOSES.
THOS. NEWBIGGING, M.Inst.C.E., and WM. NEWBIGGING, Assoc.M.Inst.C.E.
With an Appendix of Decided Cases.
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A. M. CALLENDER & CO.,
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THE BEST are THE CHEAPEST.
HOMOGENEOUS CONSTRUCTION ~ PERFECT FINISH ~ LONGEST CONTINUOUS LIFE.
WE HAVE RETORTS MAKING GAS TO-DAY THAT HAVE BEEN IN CONSTANT USE FOR 52 MONTHS.
Awarded the Only GRAND PRIZES At St. Louis Exposition
BY A JURY COMPOSED OF THE MOST COMPETENT ENGINEERS OF FOUR CONTINENTS, FOR SUPERIOR
RETORTS * GAS BENCHES * FIREBRICK.
Designs and Estimates Cheerfully Furnished.
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You can buy burners
that cost less than

BRAY BURNERS,

But all you save on the first cost wil be lost a hundred times over in the increased number of complaints and dissatisfied consumers.

DON'T PUT GOOD GAS IN THE HOLDER AND SPOIL IT AT THE BURNER.

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Have been used by the largest Gas Companies for over forty years, because

THE PROGRESSIVE GAS MAN ONLY WANTS THE BEST.

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NEW YORK,

Have you a Bray Blue Book? SOLE AGENTS FOR THE UNITED STATES.

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Ludlow Valve Mfg. Co.,

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Double and Single Gate Valves, ¼" to 72",

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Gas, Water, Steam, Oil, Ammonia, Etc

HOT GAS VALVES A SPECIALTY.

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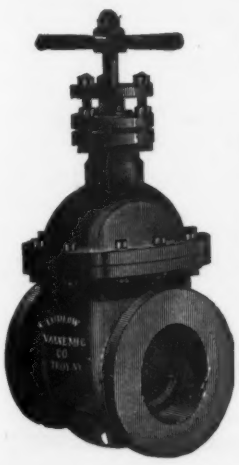

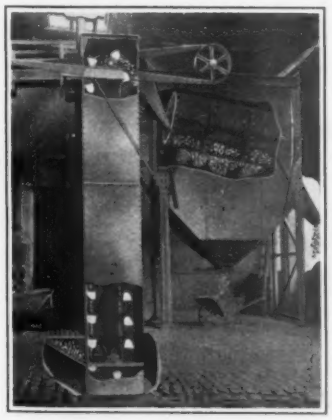

ELEVATING AND CONVEYING OUTFIT

installed for the Mutual Gas Light Co., New York City, for

Reclaiming Coke From Ashes.

"We claim intelligent application of well-known appliances in novel and original ways to solve problems."

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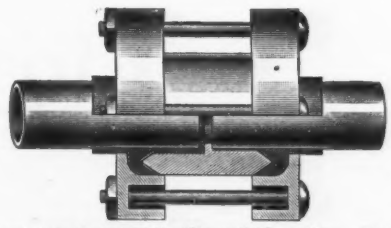
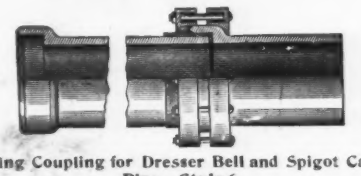
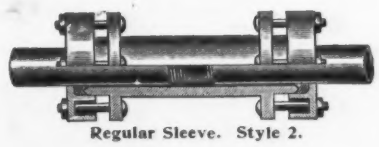
Patentee and Manufacturer of Specialties for Oil and Gas Lines.



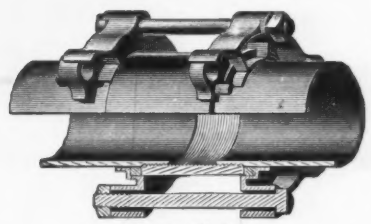
Insulating Coupling for Wrought Iron Pipe. Style 5.



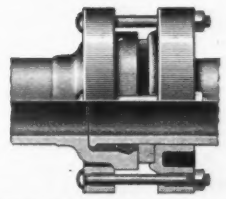
Insulating Coupling for Dresser Bell and Spigot Cast Iron Pipe. Style 6.



Regular Sleeve. Style 2.



Clamp. Style 4.



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Pipe Couplings, Sleeves, Clamps, Crosses, Tees and Ells.

My Insulating Coupling prevents the destruction of pipe by electrolytic action, in either water or gas lines.

SEND FOR CATALOGUE.

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This Company has purchased the patents and goodwill in the business hitherto carried on and owned by *A. M. Sutherland.* It is now ready to contract for the erection and installation of

ENTIRE GAS WORKS,

or any separate portion of the same, such as **Gasholders, Coal Gas Benches, Lowe-Sutherland** double-superheater **Water Gas Sets,** Scrubbers, Condensers, Exhausters, Purifying Boxes, Street Governors, Street Mains and Main Laying.

The high character of the work done by A. M. Sutherland during the past 15 years will be strictly adhered to and all work is warranted.

Mr. Sutherland remains with the Company for two years President and Director, and will give personal attention to contracts.

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See it Grow!

Lloyd's Rubber Lute

From January 1st, 1905, to date,
Has been contracted for on Purifiers aggregating

15,324,000

Cubic Feet Daily Capacity.

L. C. Co. Catalogue, Sect. 700.

ONLY LICENSED BUILDERS:
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RATCHET HANDLE PATTERN.

C—035.

Some pipe reamers do not cut evenly because they cannot be kept from wabbling in the pipe.

Mueller Pipe Reamers have a wheel-shaped breast handle with which the operator can hold them rigid. This assures an even cut.

Mueller Pipe Reamers will ream any size of pipe from ⅜ to 8-inch. They are made in plain handle and ratchet handle pattern. The reamer illustrated is the ratchet handle pattern.

Each reamer is carefully inspected and bears the Mueller trade mark, and is assembled, is given an actual working test, *unconditionally guaranteed.*

We also make gas cocks, meter connections and tapping machines for gas works use. Catalogues upon application.

EASTERN DIVISION—Located at 254-258 Canal Street (cor. Elm), New York City, carries a full stock of Mueller goods.

THREE GRAND PRIZES were awarded Mueller Water, Gas and Plumbing goods, respectively, at St. Louis.

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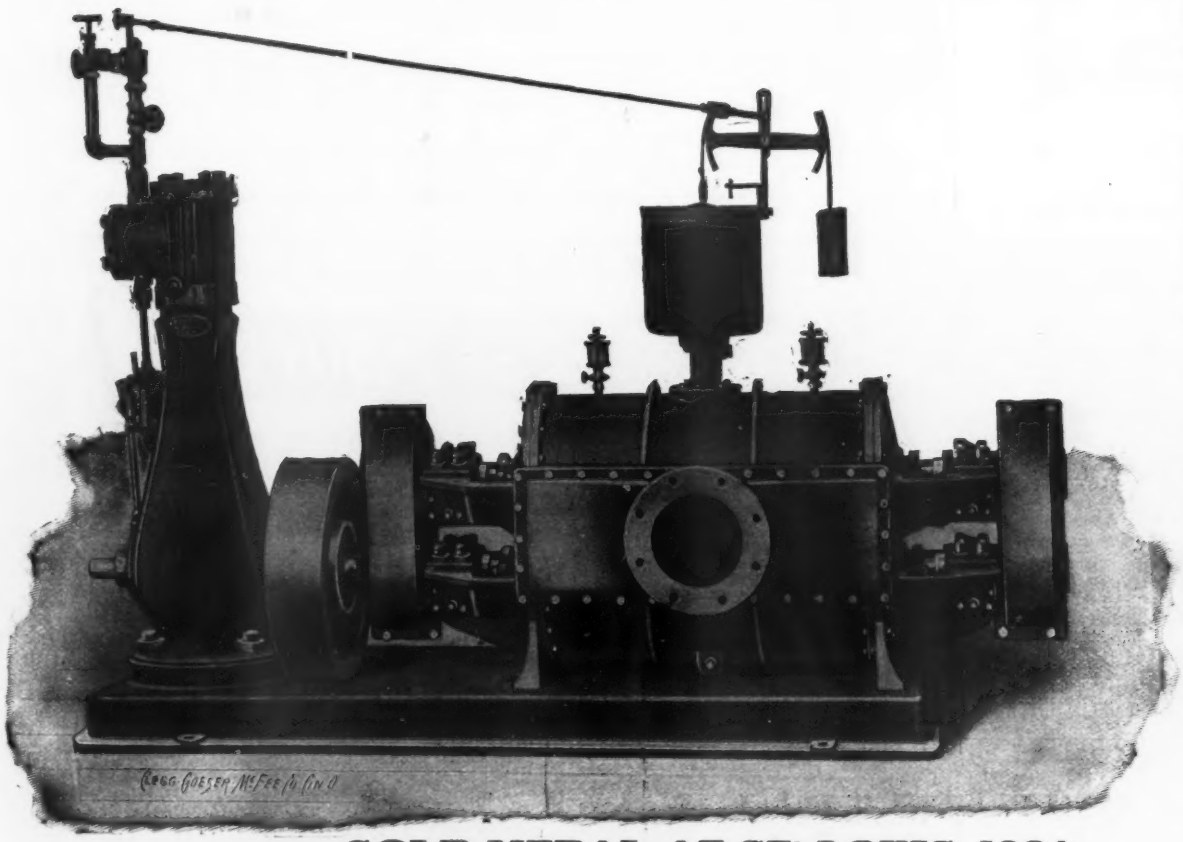

GOLD MEDAL AT ST. LOUIS, 1904.

Sizes for any required capacity.

Self-oiling, adjustable bronze bearings.

Most perfect and sensitive Governor.

Write for Catalogue.

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WILL CONTINUE THE BUSINESS OF

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For Gas, Water and Electric Light Companies, at

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Estimates Furnished on any kind of Work in Connection with Gas or Water Plants.

SPECIAL ATTENTION GIVEN TO THE REMODELLING AND EXTENDING OF THE PROPERTIES OF WORKS NOT UP-TO-DATE.

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CAST IRON PIPE AND SPECIAL CASTINGS

FOR WATER AND GAS.

Also, FLANGE PIPE, LAMP POSTS, Etc.

GAS TAPPING MACHINES

—FOR—

Drilling and Tapping Pipe under Pressure

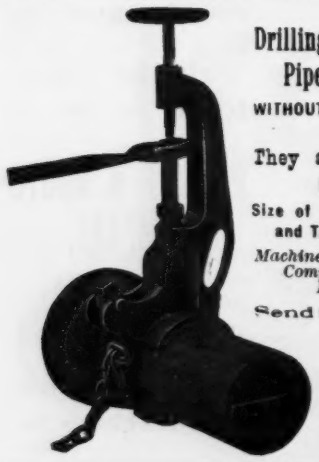
WITHOUT ANY ESCAPE OF GAS.

They are Strong and Compact.

Size of Combination Drills and Taps ¾ to 4-inch.

Machines Sent to any Gas Company for Thirty Days' Trial.

Send for Circulars.



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"THE MINER"
Globe Street and Boulevard Lamps.
Cheapest and Best
THOUSANDS IN USE WITH INCANDESCENT BURNERS.
Send for Catalogues.
THOMAS T. W. MINER,
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COAL AND COKE HANDLING MACHINERY.
Our specialty is building machinery for the economical handling of coal and coke in gas plants. Send for new catalogue containing illustrations and descriptions of plants we have installed, if you are interested in the economical handling of these materials.
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Drawings, Specifications and Estimates furnished for the construction of new works or alteration of old works. Special attention given to Patent Office drawings.
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Plans prepared and Estimates furnished at short notice.
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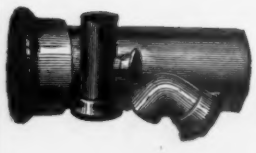
WARREN FOUNDRY AND MACHINE CO.,

Established 1856. Works at Phillipsburgh, N. J.

New York Office, 160 Broadway.



CAST IRON WATER AND GAS PIPE,

FROM THREE TO FORTY-EIGHT INCHES DIAMETER. ALSO, ALL SIZES OF

Flange Pipe for Sugar House and Mine Work. Branches, Bends, Retorts, etc., etc.

CHARLES MILLAR & SON CO., Selling Agents, Utica, N.Y.

Flanged Pipe and Fittings, Hydrants, Gates, Pig Lead, Jute, etc.

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Manufacturers of Lead Pipe, Solder, etc., and Jobbers of Plumbers' and Tinners' Goods.

CAST IRON PIPE and SPECIALS FOR WATER AND GAS.

Wholesale Eastern Agents AKRON VITRIFIED SEWER PIPE.

SAFETY GAS MAIN STOPPER COMPANY,

For Shutting Off Gas in Mains

Any size gas main can be shut off in 30 seconds. : : :

Temporarily during alterations and repairs. : : : :

STOPPERS SENT ON TRIAL.

Address: SAFETY GAS MAIN STOPPER CO., 1668 Park Ave., New York City.

This is No. 2.

Height, 36 inches.
Diameter, 12 "
Shipping weight, 80 lbs.
Net weight, 50 lbs.
The products of combustion are entirely separate from the water. Entire water surfaces are tinned.

Price, $35.00.

HOT WATER

FOR BATHROOM AND KITCHEN

is most easily, quickly and economically supplied by a

Humphrey Crescent Instantaneous Water Heater.

Prices range from $20 to $45.
Every Heater GUARANTEED.

Set a heater for every gas consumer. You will please them and increase sale of gas at the same time.

Send to-day for catalogue and discounts to

HUMPHREY CO.,
Kalamazoo, Mich.,

The only manufacturers in the World of a COMPLETE LINE OF INSTANTANEOUS WATER HEATERS.

GAS ANALYST'S MANUAL,

By JAQUES ABADY, M. Inst. Mech. E.

(Incorporating F. W. Hartley's "Gas Analyst's Manual" and "Gas Measurement.")

Ninety-three Illustrations and Nine Folding Plates. Bound in Handsome Half Leather. Price, $6.50

For Sale by **A. M. CALLENDER & Co., 42 Pine St., New York City.**

AMERICAN METER CO.,

NEW YORK, ST. LOUIS, PHILADELPHIA, SAN FRANCISCO, CHICAGO,

Photometrical and Experimental Apparatus.

PUBLIC LIGHTING TABLE.

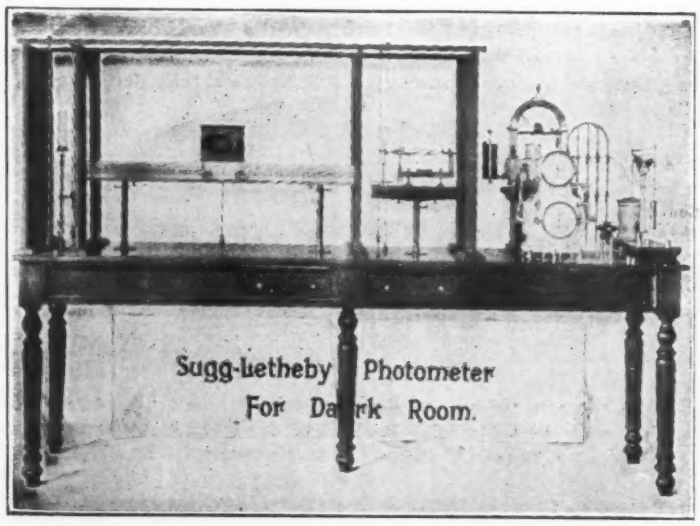
JUNE, 1905.

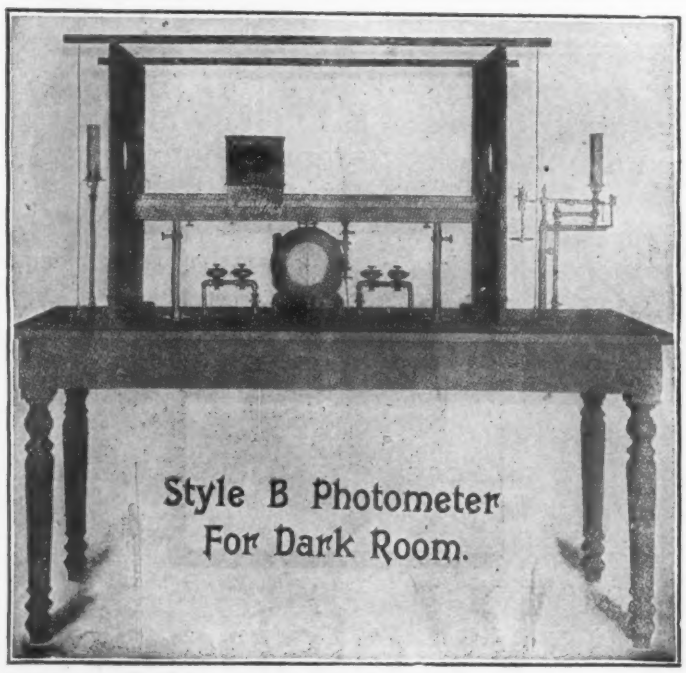
Day of Week.	Date.	Table No. 1. FOLLOWING THE MOON. Light.	Extinguish.
Thu.	1	7.50 PM	3.30 AM
Fri.	2	7.50 NM	3.30
Sat.	3	7.50	3.30
Sun.	4	7.50	3.30
Mon.	5	7.50	3.30
Tue.	6	7.50	3.30
Wed.	7	10.00	3.30
Thu.	8	10.40	3.30
Fri.	9	11.20	3.30
Sat.	10	11 50 FQ	3.30
Sun	11	12.30 AM	3.30
Mon.	12	1.00	3.30
Tue.	13	1.40	3.30
Wed.	14	2.20	3.30
Thu.	15	No L.	No L.
Fri.	16	No L. FM	No L.
Sat.	17	No L.	No L.
Sun.	18	8.00 PM	9.50 PM
Mon.	19	8.00	10.30
Tue.	20	8.00	11.10
Wed.	21	8.00	11.50
Thu.	22	8.00	12.20 AM
Fri.	23	8.00	12.50
Sat.	24	8.00 LQ	1.20
Sun.	25	8.00	1.50
Mon.	26	8.00	2.20
Tue.	27	8.00	2.50
Wed.	28	8.00	3.20
Thu.	29	8.00	3.30
Fri.	30	8.00	3.30

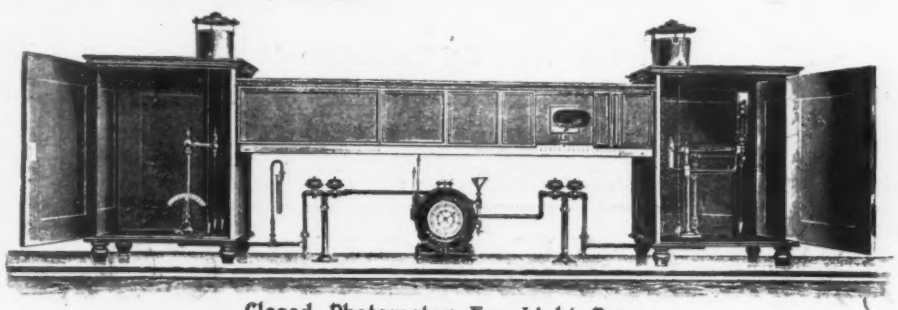
TOTAL HOURS DURING 1905.

By Table No. 1.

	Hrs.Min.
January	240.50
February	192.20
March	207.00
April	175.10
May	161.00
June	139.50
July	149.00
August	161.50
September	173.00
October	205.00
November	211.00
December	229.00
Total, yr.	2245.00







Closed Photometer For Light Room.

CIRCULARS SENT ON REQUEST.

PUBLIC LIGHTING TABLE.

JUNE, 1905.

Day of Week.	Date.	Table No. 2. NEW YORK CITY. All Night Lighting. Light	Extinguish.
		P. M.	A.M.
Thu.	1	7.15	3.15
Fri.	2	7.15	3.15
Sat.	3	7.15	3.15
Sun.	4	7.25	3.15
Mon.	5	7.25	3.15
Tue.	6	7.25	3.15
Wed.	7	7.25	3.15
Thu.	8	7.25	3.15
Fri.	9	7.25	3.15
Sat.	10	7.25	3.15
Sun.	11	7.25	3.15
Mon.	12	7.25	3.15
Tue.	13	7.25	3.15
Wed.	14	7.25	3.15
Thu.	15	7.25	3.15
Fri.	16	7.25	3.15
Sat.	17	7.25	3.15
Sun.	18	7.30	3.15
Mon.	19	7.30	3.15
Tue.	20	7.30	3.15
Wed.	21	7.30	3.15
Thu.	22	7.30	3.15
Fri	23	7.30	3.15
Sat.	24	7.30	3.15
Sun.	25	7.30	3.15
Mon.	26	7.30	3.15
Tue.	27	7.30	3.15
Wed.	28	7.30	3.15
Thu.	29	7.30	3.15
Fri.	30	7.30	3.15

TOTAL HOURS DURING 1905.

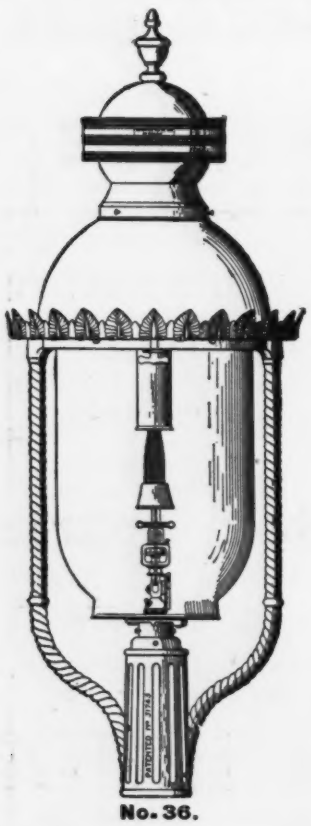
By Table No. 2.

	Hrs.Min.
January	423.20
February	355.25
March	355.35
April	298.50
May	264.50
June	234.25
July	243.45
August	280.25
September	321.15
October	374.30
November	401.40
December	433.45
Total, yr.	3987.45

NEW YORK, 9 Libert Street. BOSTON, 814 Beacon Building. PHILADELPHIA, Broad and Arch Streets. ST. LOUIS, 712 Roe Building. CHICAGO, Foot of Orleans Street. SAN FRANCISCO, 712 Polk Street.

WELSBACH STREET LIGHTING COMPANY

.... OF AMERICA ....



No. 36.

Controls and Operates the

Welsbach System of Street Lighting,

Which includes its specially DESIGNED AND PATENTED BURNER for STREET and PARK LIGHTING exclusively.

Uniformly SUCCESSFUL in 150 Cities and Towns.

By means of the Welsbach System of street lighting the superiority of GAS over electricity for street lighting has been fully demonstrated.

POINTS OF MERIT:

It is { Economical, Attractive, Successful, Up-to-date.

IT LIGHTS THE STREET.

Where there are no gas mains we can furnish an equally good light by our SELF-GENERATING NAPHTHA WELSBACH BURNER, and thereby supply a uniform light in all localities.

Correspondence Solicited from Gas Companies and Others interested in Municipal and Outside Lighting.

No. 38.

AN underlying principle in business is to show an increase each year---to grow. The astute dealer not only seeks to retain this year's customers, but to attract new trade next year.

The formula is simple---

THIS SHIELD IS THE WELSBACH TRADE MARK.

IT IS A GUARANTEE AND A PROTECTION.

Sell The Welsbach Brands.

The imitation stuff is bad for the customer---which is bad for you.

The genuine Welsbachs---Burners or Mantles---make satisfied customers---keep customers---MAKE NEW ONES.

And your profit isn't merely dollars and cents.

WELSBACH CO.,

Broad and Arch Sts., PHILADELPHIA.

THE UNITED GAS IMPROVEMENT COMPANY

For the Year Ending December 31st, 1904, has been Awarded Contracts for 45 Sets of

Standard Double-Superheater Lowe Water Gas Apparatus.

PARTIAL LIST OF PLACES:

Harrisburg, Pa.
Pelham, N. Y.
Reading, Pa.
Augusta, Me.
Bangor, Pa.
Woonsocket, R. I. (2d contract).
Brooklyn, N. Y. (4th contract).
Cincinnati, O. (2d contract).
Scranton, Pa. (3d contract).
New York City (14th contract).
New Haven, Conn. (2d contract).
Watertown, N. Y.
Tampa, Fla. (3d contract).
Westchester, N. Y. (3d contract).
Bridgeport, Conn. (2d contract.)
St. Paul, Minn. (2d contract).
Springfield, Mass. (2d contract).
Lynn, Mass. (5th contract).
Rochester, N. Y.
Battle Creek, Mich.
Mechanicsburg, Pa.
Excelsior Springs, Mo.
Bristol, Conn.
Jersey Shore, Pa.
Vicksburg, Miss.

TOTAL SETS, 1904, ... 45
TOTAL DAILY CAPACITY, 1904, ... 56,325,000 cubic feet.
TOTAL SETS TO DATE, ... 553
TOTAL DAILY CAPACITY, ... 419,180,000 cubic feet.

The United Gas Improvement Company,

Broad and Arch Streets, Philadelphia.

Established 1858. Incorporated 1890.
CHAS. E. GREGORY, Prest. DAVID R. DALY, V.-Prest. & Treas.
H. D. ABERNETHY, Sec.

J. H. Gautier & Co.

Greene & Essex Streets,
Jersey City, N. J.

MANUFACTURERS OF

CLAY GAS RETORTS, FIRE CLAY TILES,
FIRE BRICK and FIRE CLAY SPECIALTIES.

Ground Fire Clay, Fire Sand and Ground Fire Brick in Barrels and Bulk.

SOLE MANUFACTURERS OF THE

FLEMMING GENERATOR GAS FURNACE

Brooklyn Fire Brick Works,

OFFICE AND WORKS:
88 VAN DYKE ST., BROOKLYN, N. Y.
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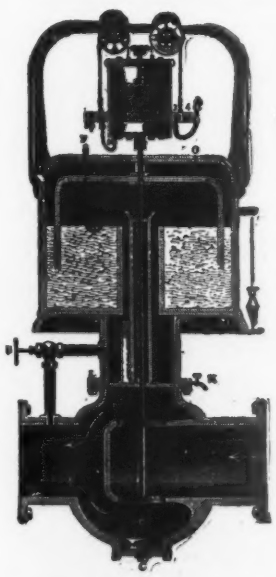

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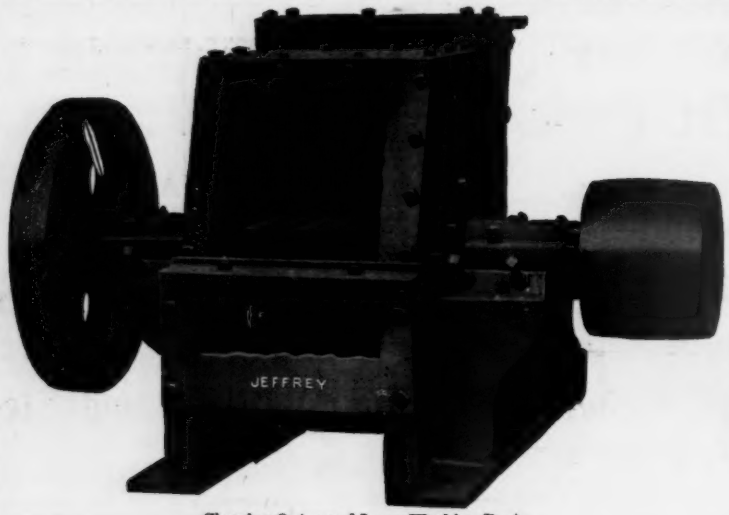

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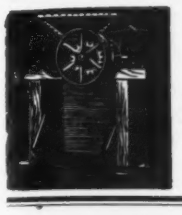

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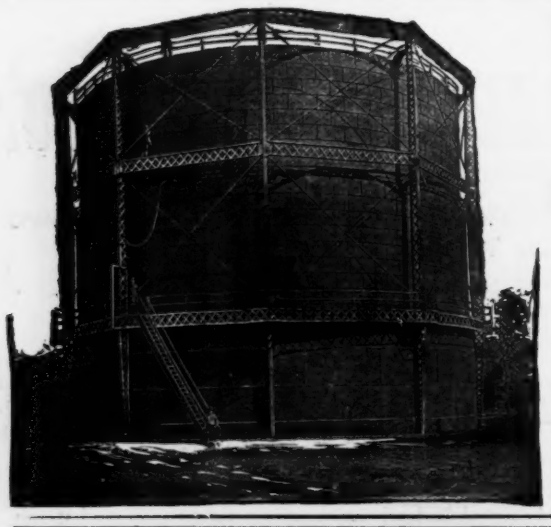

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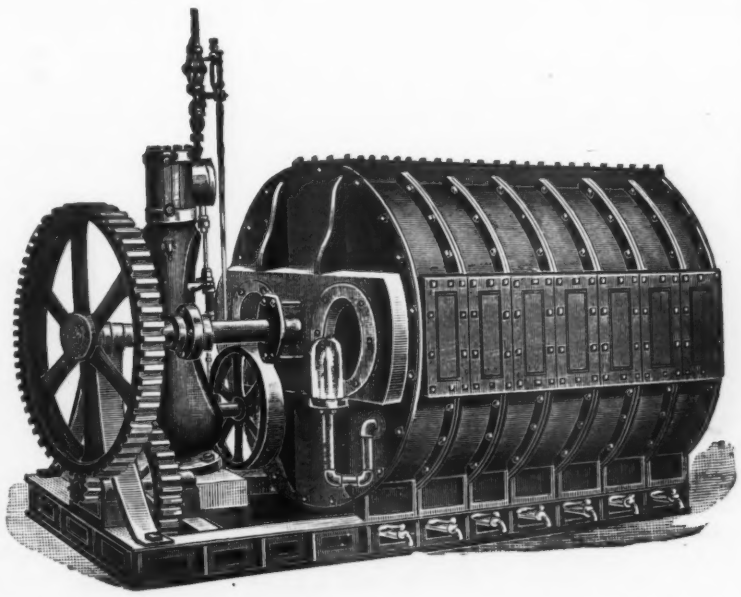

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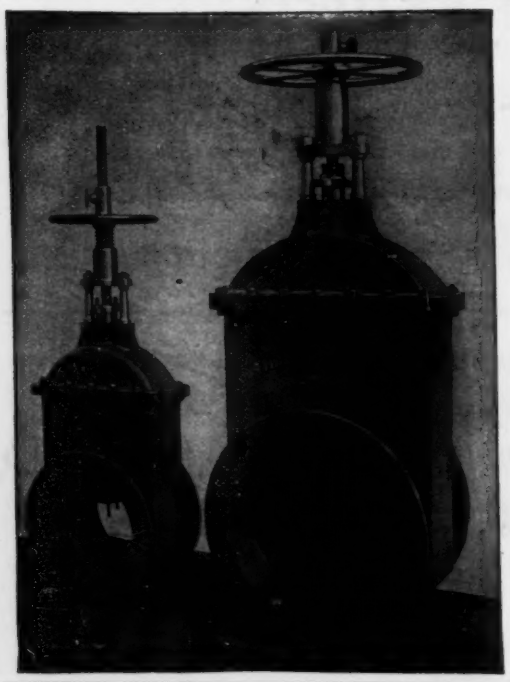

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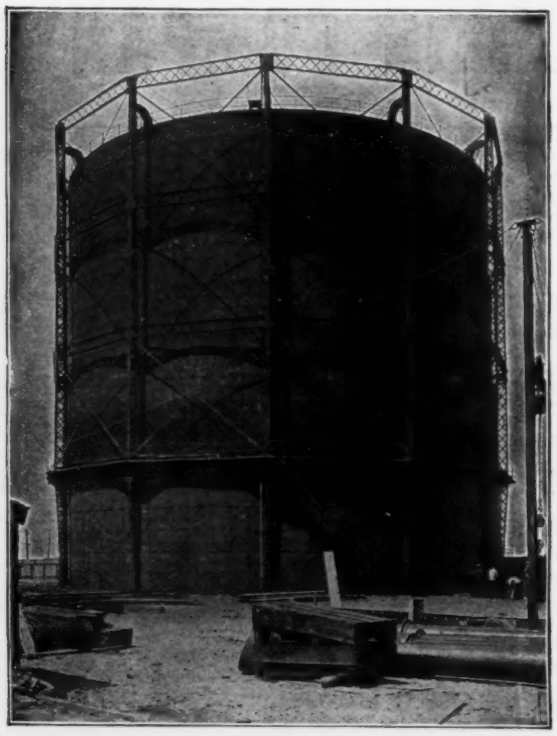

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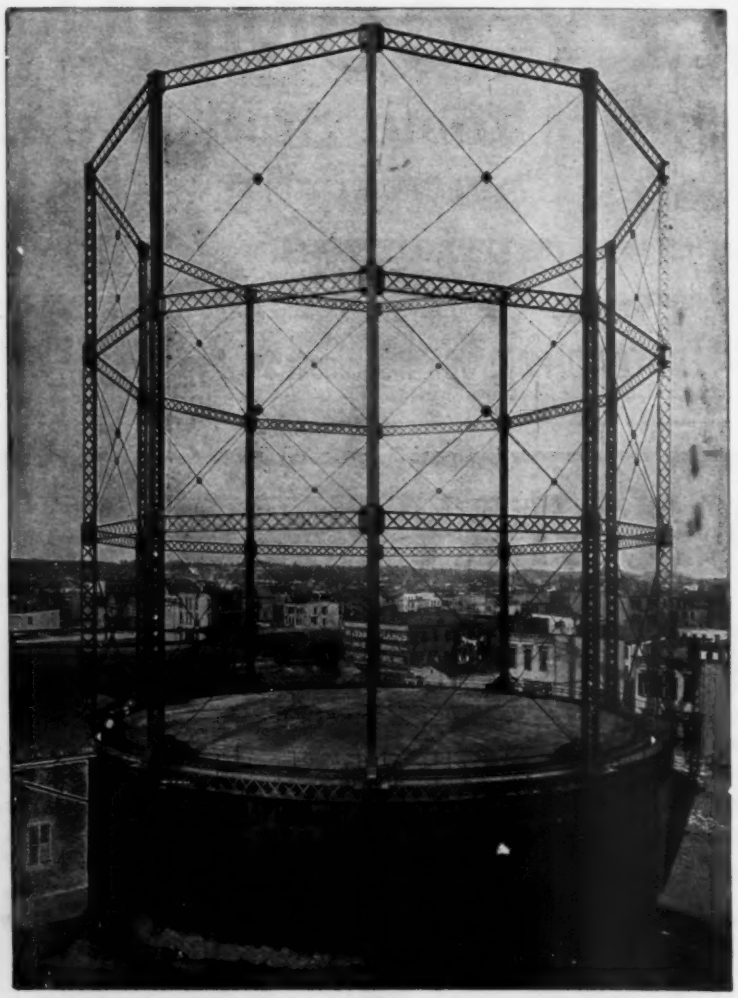

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